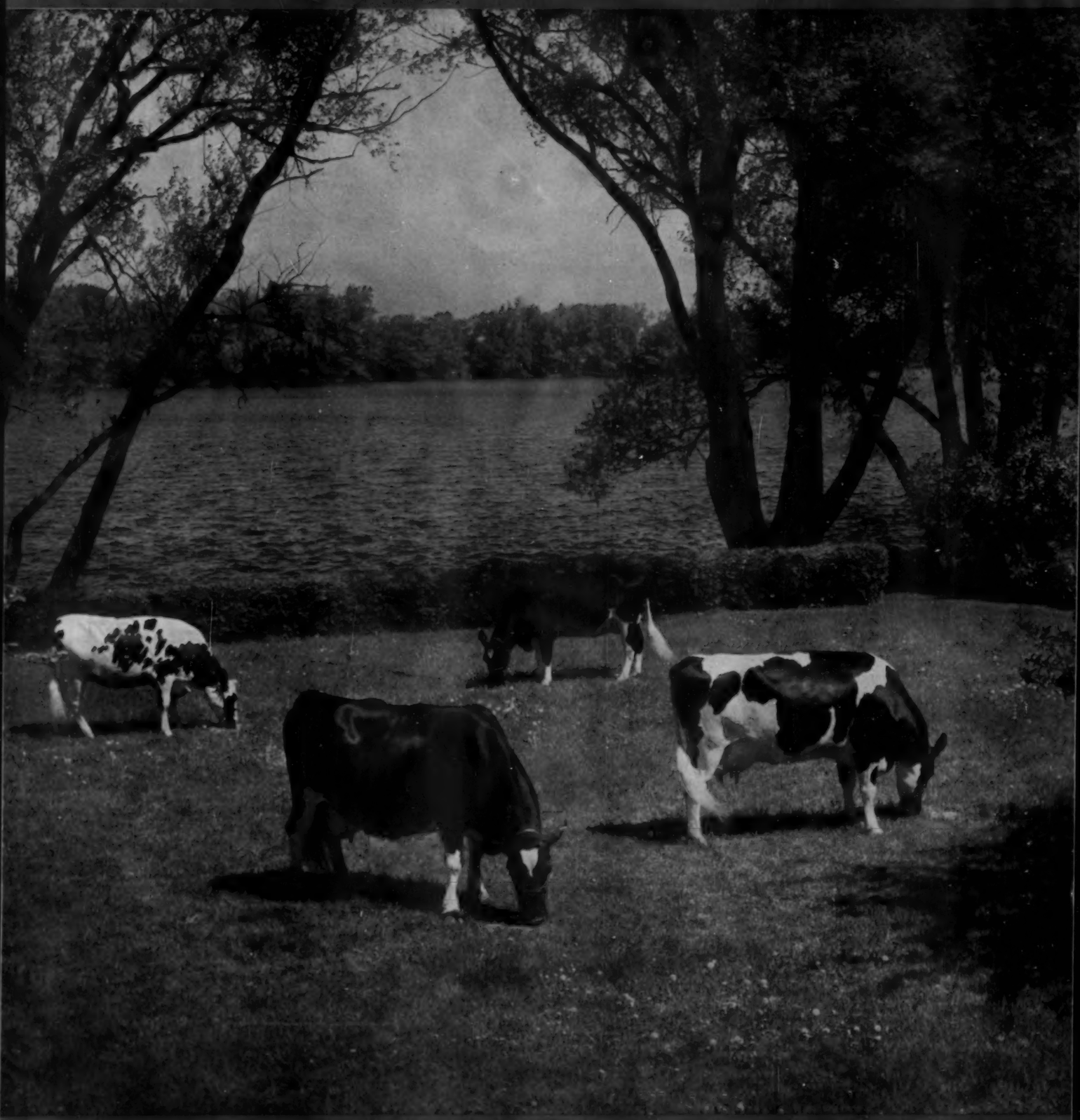
HOARD'S DAIRYMAN

JUNE 10, 1956



THE NATIONAL DAIRY FARM MAGAZINE

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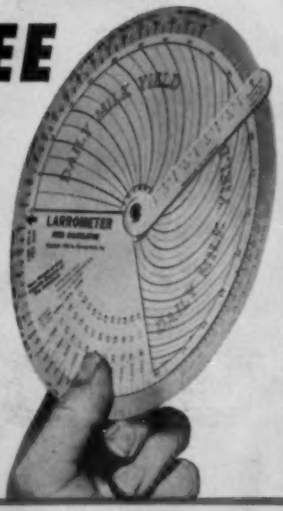

Here's an easy way to pin-point feed requirements for any cow . . . avoid underfeeding or overfeeding . . . make proper allowances for any part of the lactation . . . keep an easy-to-make, periodic check on all cows at all times . . . and make the most profit from your feeding.

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HOARD'S DAIRYMAN

The National Dairy Farm Magazine

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Fort Atkinson, Wis.

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COVER PICTURE

A great cow and her three daughters are fittingly featured on the cover of our first issue in this Dairy Month of June. In the foreground is the famous Minnow Creek Eden Delight. In five consecutive lactations, Delight has produced over 1,000 pounds of fat on twice-daily milking. She was classified Excellent at 13 years.

The other three individuals are daughters of Delight. On the right is Lakefield Fobes Delight. As a senior 4-year-old, she produced 916 pounds fat. The other two daughters are younger cows. Unfortunately, as this is written, Lakefield Farms, Michigan, is being dispersed May 18 and 19. The fine family will have a new home.

Cover photo by Fred Wetmore.

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The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be received by the 1st of that month.

Washington Dairygrams

SENATE APPROVES NEW FARM BILL WHICH APPARENTLY HAS PRESIDENTIAL APPROVAL. STILL MUST GO TO CONFERENCE TO IRON OUT DIFFERENCES WITH HOUSE VERSION. SENATE BILL APPROVES SOIL BANK WITHOUT PREPAYMENTS THIS YEAR. FEED GRAIN SUPPORTS UP FROM 70 TO 76 PER CENT OF PARITY. APPROVED TWO-PRICE PLAN FOR RICE AND EXPORT SALE OF COTTON STOCKS AT WORLD MARKET PRICE.

SCHOOL LUNCH FUNDS WOULD BE BOOSTED TO $100 MILLION BY HOUSE-APPROVED BILL. PRESENT APPROPRIATION ABOUT $82 MILLION.

MILK FLOW UP 2 BILLION POUNDS IN FIRST FOUR MONTHS OF 1956 COMPARED TO SAME PERIOD LAST YEAR. APRIL PRODUCTION INCREASE NOT QUITE AS HIGH AS PREVIOUS MONTHS, HOWEVER. TOTAL INCREASE TO DATE SLIGHTLY OVER 5 PER CENT.

PRICE SUPPORT LOSSES OF NEARLY $800 MILLION INCLUDE HEAVY CHARGES TO DAIRY PRICE SUPPORT OPERATIONS. HOUSE COMMITTEE STATES ONLY $194.5 MILLION CHARGEABLE TO BASIC COMMODITIES BUT NEARLY HALF OF LOSSES WERE FOR "MANDATORY NONBASIC COMMODITIES WHICH INCLUDES PRINCIPALLY BUTTER AND MILK."

RUMBLINGS OF DISCONTENT ARE BEING HEARD FROM QUARTERS WHICH PREVIOUSLY HAVE SUPPORTED PRESENT DAIRY PROGRAM. SENTIMENT GROWING TO TAKE A NEW PROGRAM IN FACE OF FAILURE OF PRESENT PROGRAM TO BRING PRODUCTION AND SUPPLY INTO BALANCE. NO STRONG ACTION EXPECTED AT THIS SESSION OF CONGRESS. WANT TO KEEP ISSUE BIPARTISAN AND OUT OF ELECTION CAMPAIGN. LOOK FOR MAJOR DEVELOPMENTS NEXT FALL AND EARLY WINTER.

★ ★ ★

In YOUR next issue!

A REVOLUTION ON OUR FARMS . . . In four short years the number of farms reporting milk cows dropped 20 per cent. Cows per farm are up 18 per cent, while milk sold per farm has jumped 39 per cent since 1949.

PLANTS USE SIGN LANGUAGE . . . We don't always have to test the soil to know which plant food elements are lacking. Here's how to read the leaves of your crops.

USE GOOD CLEAN OIL . . . It is the lifeblood of your tractor . . . How to select the proper oil for your tractor at various work loads.

DO MILK ORDERS NEED A "NEW LOOK"? . . . Dairy farmers have been well-served by federal milk orders. Like all good tools, however, they have been misused in some areas. Results have been less than desirable say the authors.

GRAZING OR GREEN FEEDING . . . Here's a balance sheet with all of the arguments for and against hauling pasture to your cows.

AND MANY MORE . . .

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Fort Atkinson, Wisconsin

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low cost fly control for dairy barns

one spraying of DIAZINON kills flies for 4-6 weeks

TWO OR THREE RESIDUAL SPRAYS OF DIAZINON WILL CONTROL FLIES ALL SEASON in your dairy barns and other farm buildings.

This is important to the contentment, welfare, and production of your herd, and to your profits. Many figures have been given, but agricultural experts estimate milk production losses due to flies at between 8% and 20%. This is a costly loss for your pocketbook.

DIAZINON, a product of Geigy research, is the most effective fly control chemical you can buy. Yet it is low in cost because of its long residual action. Since only 4-lbs. of the 25% wettable powder in 25 gals. of water is required to treat the average size dairy barn, fly control protection with DIAZINON amounts to only a few cents per day. Combined with good sanitation and management practices, DIAZINON provides an excellent fly control program. DIAZINON knocks flies down fast and is effective against strains which have become resistant to other types of fly control chemicals.

DIAZINON is relatively simple and safe to use. Simply cover all livestock feed and drinking fountains. Remove animals from building during spraying operation and keep them out for four hours. (Do not spray animals.)

Exhaustive tests have shown that proper residual applications in dairy barns do not result in milk contamination. DIAZINON is also preferred for control of flies in barns housing other livestock, and for maggot control in manure pits.

DIAZINON is available in wettable powder, emulsifiable solution and granular bait formulations. Ask your farm supply dealer the best method of DIAZINON fly control for your particular problem.

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Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

They use our money

It is time we dairymen woke up and prodded some of our so-called "leaders." If the present ones won't "lead," let's get someone who will.

Some years ago I worked in a nearby city and was a member of a local union. At one of their meetings this subject was brought forth: The men thought it unfair to wait for their pay until Wednesday when the pay period ended on Friday night. Their employers were accused of using the workmen's money from Friday night until Wednesday, and the workingmen thought they should be allowed interest during this time.

How about we "stupid" farmers? The milk company gets our milk, processes it, sells it, collects for the sale of milk, and then after a few more days they send the farmers their checks.

On January 1, for example, I started a new month in selling milk. Most of the milk has been consumed at this date (January 30) and my "pay period" will end January 31. My check will come to me February 19. So, for 50 days, and gradually a less time, the milk company uses my money. I'm certain a little organization would remedy many of these problems.

To those of you who "balk" at organization—we are sometimes referred to as "big businessmen." Name one big business that is not organized.

Let's get "hep," kick politics out of farming, and put ourselves on a reasonable paying basis.

Illinois LEONARD J. NYBERG

"Continue to be critical"

Mr. Peterson of Wisconsin questions, in his April 25 "brickbat and bouquet" letter, that high herd averages can be attained and maintained by artificial breeding. His experience has not been favorable, nor is he alone.

As long as there are bulls and bull studs, someone will think that in the selection of sires errors in judgment have been made (a healthy situation), and that they could have done a little better.

The discussion of the relative importance of health, care and feeding, and inheritance is academic. Everybody knows you cannot get 10,000 pounds of milk out of a cow whose glands will only let her produce 5,000 pounds of milk. Everybody knows, too, that, around and about, there are a lot of cows producing 5,000 pounds capable of economically producing 10,000 pounds.

To Mr. Peterson inheritance is of greater importance because that is where he thinks he is weak. To many other dairymen their bull stud is taking care of this problem. And, to them good management, health, and the better care and feeding of their herds is their first concern and all they ever think of. This is 100 per cent important to them.

Let's continue to be critical. You've got to keep these sire selection boys worrying and sweating. They have got to be steady and not swept off their feet by ballyhoo, misleading advertising, uneconomical and selected high records, pressure, and "the momentary clamor of the multitude."

But unless you keep them worrying and thinking, you will not get as good bulls. They have made mistakes in the past. They expect to, and will, in the future. They are human. They should never get a good night's sleep. Could you if their responsibility was yours?

New York ROBERT B. EATON

What I heard in Florida

I have just returned from Florida where I talked with many dairymen and also with two members of the suspended Florida Milk Commission. Although neither was a producer member, both talked freely and it was gratifying to hear the conclusions reached from their experiences.

1. Average cost of production by area is used to determine the Class I price to producer. In the St. Petersburg area this is, roughly, $7 per hundred the year around for 4 per cent milk.

2. Federal orders are not the answer because control is soon lost by producers to Washington bureaucracy. This was sweet music to my ears after years of such experience in Cleveland.

3. One member favored retail price fixing. The other said there was so much under-the-counter dealing that it was impractical.

4. Member John M. Scott of Gainesville said that Georgia had a model state control law, patterned after Florida's but correcting certain mistakes that had shown up through the years.

5. The member who asked that his name be withheld, said that the commission was extremely embarrassed by a certain producer-distributor who hollered long and loud that he would sell milk for 23 cents a quart if the law were abolished. He has now had about a year to do this very thing and he has not lowered his price one cent.

Ohio J. M. BENSON

Strike for fair price

On April 16 the price of milk in Chicago stores increased 1 cent per quart. Less than two weeks later, on May 1, it was again increased ½ cent per quart. The last raise was accounted for in the newspapers, due to the drivers obtaining an increase in salary. The drivers now earn a minimum of $100 per week plus commissions.

The dairy employees get a raise every year and if they don't they will go out on strike, the reason for this being that they are organized and the unions will see to it that they get their increase. How much of an increase does the farmer get every year?

There are many farm organizations, but what are they doing about it? It is quite obvious that the farmers should go on strike and make it a good long strike, and hold out for at least $5 per hundred pounds.

I noticed several months back that one of the Farm Bureau writers stated that a strike is not the way to get an increase in milk prices. However, I presume that he is receiving more money today than he did in the past several years. In other words, he is not working for less money than dairy farmers.

Summing it up, practically all union employees in the city receive an increase of some kind every year, so why can't the farmer get the some treatment? I venture to say that the dairy farmer will not get a fair price for his products unless he strikes.

Illinois G. J. PAGE

Wants a minimum wage

Why should not all farm commodities be sold by the farmer at the farm level, either directly or through his cooperative, to dealers, processors, or speculators at prices which are equivalent to a minimum wage?

My proposal is that a processor or dealer, or any other buyer of a farm commodity, pay to the farmer, by law, a fair minimum price for such farm commodity as will yield to the farmer the equivalent of a dollar per hour minimum for his labor.

How do we arrive at such equivalent?

Most of the agricultural schools have made exhaustive studies in costs of farm production. In a study on milk production, Cornell University has prepared an excellent report which shows that for the month of October 1955 it cost the farmer $5.42 to produce a hundred pounds of milk at approximate wage levels of 75 cents per hour.

The prices developed could be realistic and practical. The prices developed should apply to a reasonably efficient farmer, so that the marginal and submarginal farmers might only get 70 to 80 cents per hour, while the real efficient farmers earn $1.40 to $1.50 per hour. In this way, incompetence and inefficiency would not be perpetuated.

When a factory or business establishment is shut down, workers there continue to receive their unemployment insurance benefits. So, the farmer, too, should have some stand-by insurance.

Connecticut A. J. ROSENSTEIN

Disputes "dollar dike"

Knowing your interest in programs to help dairy farmers, it is hard to understand how you could pass for publication the article headlined "St. Louis erects a dollar dike." The title is totally misleading, is not supported by the text, and the facts cited are greatly in error.

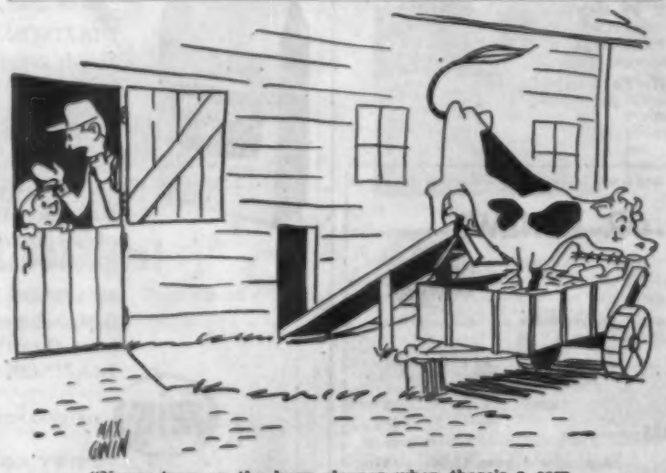
The article states: "In St. Louis and many other federal order markets, farmers have voted in 'compensatory payments' as a dike against market demoralizing, periodic flooding." The facts are that compensatory payments were not put in the St. Louis order for this purpose, nor were they put in the order by St. Louis producers per se.

The compensatory payments were inserted in the order to permit the orderly entry of milk from outside sources without needlessly imposing the regulation upon the plants supplying the milk. If plants not regularly associated with the market were totally regulated merely because they made occasional sales in St. Louis, most of them would refuse to deliver the milk. Whether such plants are located in Wisconsin, Missouri, Illinois, or anywhere else, has no bearing on the problem.

It follows that if plants are permitted to ship milk into the market without being subject to full regulation, plants which regularly supply the market must have assurance that they will not find themselves barred from making sales by paying the full Class I price for milk used for fluid purposes. To take any other position is to argue against classified pricing and quality improvement. Maybe the authors of the article are opposed to classified pricing, or do not understand it?

The example cited under the heading "How 'payments' work" proves the point. For instance, if Wisconsin plants have milk to offer at $3.50, while the Class II price in St. Louis is $3.35, wouldn't it make just as much sense for St. Louis to fill its own bottles with its own Class II milk at $3.35 rather than to transport milk from Wisconsin at a cost of $3.50, plus handling charges, plus transportation?

The article also misstates the amount of the payment when it indicates that Wisconsin plants would be charged $1.15 per hundredweight as a compensatory payment. This just isn't true. In the first place, the compensatory payment is calculated on the basis of



"Never turn on the barn cleaner when there's a cow standing in the gutter."

Memo to Dairy Farmers

In many hundreds of communities this June, millions of food shoppers will be reminded that, "June's Best Buys are Dairy Foods."

* * *

June Dairy Month, without question, has developed into the biggest single food selling event of the year.

* * *

What's happened to bring this about? Hard work, mainly. The hard work of selling an idea!

* * *

It's meant calling on dairies, food stores, creameries, restaurants, producer groups, everybody in the dairy industry, with reasons why it makes good business sense to support June Dairy Month.

* * *

It's meant creating and presenting ideas for store selling, for community celebrations, enlisting the cooperation of newspapers, radio and TV stations.

* * *

It's meant working hard at the job of getting more people to think about how to sell more dairy products, and more people to think about the need for buying more dairy products.

* * *

Your American Dairy Association serves as national headquarters for June Dairy Month.

* * *

Look about you and be proud this June. Be proud of the way dairy farmers, dairy processors, the Department of Agriculture and the food industry are working together.

* * *

Be proud of the job made possible by your American Dairy Association investment of 2¢ per hundredweight of milk and ½¢ per pound of butterfat marketed.

* * *

It's a job you can be proud of.

Your Road to Sales

American Dairy Association
20 North Wacker Drive
Chicago 6, Illinois

the difference between the Class I price and the Class II price only during months of heavy milk production. Milk does not move from Wisconsin at this time of the year, and the reason has nothing to do with federal orders.

In the fall of the year, when milk is in short supply and when milk does move from Wisconsin, the compensatory payment is computed at the difference between the Class I price and the blend price which seldom exceeds 10 cents at that time of the year. Furthermore, under either condition, handlers are allowed to offset location differentials against compensatory payments. This practically wipes out the payment.

An analysis of the St. Louis market shows that the rate of the compensatory payments actually applied has averaged about 1 cent per hundredweight since the provision was made effective. Is this a "dollar dike"?

Furthermore, as stated in the article, compensatory payments do not apply in St. Louis to milk originating at plants regulated by other federal milk market orders. This is because the other federal order markets insure the integrity of the classified price structure. Furthermore, the total exemption from compensatory payments for milk originating in other federal order markets insures that milk in St. Louis will be competitive with that from any other market.

The article also indicates that there is something sinister about the allocation provisions of the St. Louis order. But, again, if St. Louis is short of milk, supplies shipped in receive the Class I utilization. If the market is not short, isn't it rather elementary that the lower-cost St. Louis milk should be used for Class I purposes before milk costing more money is shipped in from distant sources?

Under the St. Louis order, any milk plant, wherever located, can participate in the pool on the same basis as those now participating if they choose to do so and can find a buyer for their milk. Our record shows that approximately 10 new plants have entered the St. Louis pool since the present order was made effective. Two entered the market last year.

We would agree that it is highly important for producers to understand the operation of federal milk marketing orders, the benefits and obligations. The article could well have served this purpose. Unfortunately, the headline, the introduction, and the example based upon fiction rather than fact, killed it.

Missouri — RUSSELL E. SPAULDING
General Manager
Sanitary Milk Producers

Drs. Cook and Halvorson, the authors of the milk pricing series, are veteran dairy marketing specialists. A complete reading of the series will reveal that they are not opposed to classified pricing. Further, they know that without some device like compensatory payments, unregulated milk certainly is a threat to orderly marketing and the classified price system.

The illustration used was a hypothetical example, chosen solely to demonstrate the operations of compensatory payments.

Each article in the series is intended to illustrate a particular aspect of the federal order system. St. Louis was chosen to illustrate compensatory payments, although other markets might have better shown the restrictive effects.

Morton T-M Salt puts extra "gold" in your milk check

Morton TRACE MINERALIZED Salt for more milk, husky calf crop

ONLY a few extra hundredweights of milk per year will bring in enough to pay for about a ton of T-M Salt. Therefore, it is livestock insurance that costs you *practically nothing!*

College feeding trials conclusively prove the need for trace minerals in the rations of all livestock. Most farm lands are short of one or more of the essential trace minerals—**cobalt, iodine, iron, copper, zinc or manganese.** So feed Morton T-M Salt the year 'round to guard against mineral deficiencies . . . assure yourself of *more* milk, *more* meat, *more* wool and a higher return from each feed dollar.

The cost of Morton Trace Mineralized Salt over ordinary salt is less than 1¢ per animal per week. Feed it free choice, even if you feed a major mineral supplement. *You know they need it. They know how much.*

Always order Morton T-M Salt. It is the only kind you should use.

Less than ¾¢ more *Less than ¾¢ more* *Less than 1¢ more* *Less than ¼¢ more*

MORTON T-M TRACE MINERALIZED SALT

At your feed dealer's—bags or blocks.

WE PAY YOU $1.00
to try ASL
2-WAY FLY CONTROL

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- 1 pint makes 10 pints spray — 4 times stronger than most AA grade sprays
- Kills flies on contact
- Eliminates oil damage to cattle

*Reg. T.M. F.M.C.

DIAZINON**
BAIT

- 97% fly-kill in 4 hours — Goes 3 to 4 times further than older baits
- Long-lasting bait kills maggots, too
- Now approved for dairy barns

**Reg. T.M. Geigy Chem. Corp.

When used alone, either insecticide is a remarkable fly-killer, but used together they give the multiple benefits of 2-Way Control that attacks flies on livestock, in farm buildings, in the pasture and at their feeding, resting or egg-laying sites.

LOOK FOR THIS DISPLAY

The special Combination Package lets you demonstrate to yourself the superior results of Banafly 2-Way Control. Buy at the regular price — try 2-Way Control on your farm — AND ASL WILL REPAY YOU $1.00!

See your dealer or write —

ASL AMERICAN SCIENTIFIC LABORATORIES, Inc.
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NEW...YEARS AHEAD IN PERFORMANCE AND DESIGN... DE LAVAL SPEEDWAY BULK COOLER

NEW FEATURES THAT SAVE YOU LABOR!

Low height makes pouring and cleaning easier. With every pail you lift... every time you clean, you'll be glad you chose De Laval.

NEW FEATURES THAT SAVE YOU SPACE!

Shorter over-all length takes up less space in milk house... eliminates need for expensive remodeling to accommodate tank.

THREE MODELS TO FIT YOUR NEEDS EXACTLY!

Either 180- or 250-gal. capacities for every-day or every-other-day pickup. Other models available up to 1,000 gallons.

Here is the first major advance in bulk coolers—the new De Laval! Easier to clean, pour into... less space consuming ... it's the result of study on hundreds of farms to get facts for designing the best bulk cooler that could be made!

Exclusive features are only part of the De Laval Bulk Cooler story... for it also gives you completely dependable bulk milk cooling day in and day out for years ... dependability *built-in* by the greatest name in dairying!

Get all the details... mail coupon today!

THE DE LAVAL SEPARATOR CO., DEPT. 14-F, Poughkeepsie, N. Y.

Without obligation send me illustrated literature and specifications on all 3 types of De Laval Bulk Coolers.

Name_____

Town_____

RFD_____ State_____

I milk_____ cows. I use_____ milker.

THE DE LAVAL SEPARATOR COMPANY Poughkeepsie, New York • 427 Randolph St., Chicago 6 • DE LAVAL PACIFIC CO. 201 E. Millbrae Ave., Millbrae, Calif.

The St. Louis hearing decisions contain the basic thinking on this provision among other reasons for the choices.

The average charge per hundredweight actually applied does not measure the restrictive effect of the provision. The authors contend that many potential imports of milk are never made because the expected cost is prohibitive.

Losing our touch

"Are we losing our touch as cowmen?" I heartily agree with Melvin Scholl that we are rapidly doing just that (March 10). We are living in an era when everything must be done the "easy way."

Today the trend is toward self-feeding. Why? The easy way! It takes away the "drudgery" of this interesting job of feeding dairy cows for top production. And production is just another way of saying "dollars in the pocket."

Today we hear much about pen barns, pro and con. Yes, I must be old-fashioned as I know nothing about the running of cows loose in an open barn. As Mr. Scholl relates, you've got to get acquainted with your cows, know each as an individual, to put the most milk in the pail.

High producers, not the boarders, are your profitable cows. If you must have numbers, keep a few beeves along with your dairy herd. They will show you more money in the pocket than 50 "boarders."

While writing, allow me to compliment Hoard's on a well-organized, informative magazine. Please keep up the good work. May it be kept as is, with not too much in color. Do keep the reading matter of an article "well-bunched" so the reader will not have to hunt for single columns to the very last page. Thanks!

Wisconsin LEWIS S. WRIGHT

Dislikes trench silo

In your April 10 magazine, I read about the trench silo built on the Sidney Quinby farm in New York at a cost of $3 per ton capacity. The first question I want to ask is why do you mislead farmers with such information?

I constructed a trench silo 100 feet long and cemented only the bottom.

I am very dissatisfied with my silo for several reasons.

How will I fill it and pack silage at different times? For example, I have ensilage in it now and want to put in 4 acres of rye and later 3 or 4 acres of clover and late this summer fill with corn for the winter.

I hire my silo filled. The harvester doesn't work too well; it takes a week to put in 14 loads. How do I keep silage good this long in hot weather? After I get the silo full, can I refill it successfully if I have more corn? In your article you spoke of covering with sawdust and roofing felt, but you didn't have the cost of covering 2,000 square feet of ensilage, counting time and material.

Even with the cement bottom I had some spoilage on the bottom.

I know some farmers who put money into trench silos, but did this big, wonderful idea help solve the money problem? No, they had to quit farming anyway. Why do bankers and county agents recommend this trench silo idea to struggling farmers? Pennsylvania State University says there's at least 10 per cent spoilage. Could a farmer stand 10 per cent spoilage in his

milk or possibly more and sell it for $3.50 or $4 per hundredweight? Could he stand 10 per cent spoilage in his grain, hay, or livestock?

Do the bankers and county agents recommend keeping a poor cow? No, but they recommend putting money in a hole in the ground and calling it a silo! My idea as to how a trench silo originated is that somebody thought up the idea who was a good salesman but no farmer. Look the country over, man, do you see farmers making money with these silos, or are they just using them?

In your article you wrote, "However, do not build the trench silo where it will mar the appearance of your farmstead." No, I guess not—if you've got a neighbor you don't like, go dig it on his farmstead some night.

Pennsylvania W. E. CASBOHM

"Knuckle-heads"

Has anyone seen a Hoard's Dairyman in recent years in which some knuckle-head of a dairyman hasn't fired a blunderbus at oleo? (Pardon, if it is a bad word.) Just how many of you knuckle-heads have stopped to think you might be paying the oleo boys a lot to enable them to sell cheap oleo?

What, may I ask, is the main product, or by-product, whichever way you choose to look at it, of the oleo industry? Soybean, cottonseed, and linseed meal.

Who, may I ask, buys these products by the tons? It is you knuckle-headed dairymen. If the dairymen and livestock feeders would get back to feeding corn, barley, oats, silage and legume hay, they would get good production and the oleo boys would not be able to peddle their products at their present prices.

I am a knuckle-headed dairyman myself.

Kentucky R. T.

Too dumb to farm

I read the article "How much milk per man?" which C. R. Hoglund had in the February 25 issue. He has a good name but it ought to be Hogland, when he stated 200,000 pounds of milk per man. Anyone who thinks like that is a greedy, hoggish man.

That is, and has been, the trouble with all white men. That is why we have a surplus.

We will get in more and more trouble so long as we have too much government and too many big men. The big men want it all, and they like to get it from the laborer or the little man.

I, myself, wish our government would pass a law that no man and wife could own *over* 80 or 100 acres and they had to live on it. Any man too dumb to make a good living on 80 acres is too dumb to farm.

And no farm should be allowed to be bought for an investment. Any man who buys land for an investment doesn't need it.

Indiana CLIFFORD C. DAVIS

Try domestic parity

We were very pleased to read your stand on domestic parity in your editorial in the April 25 issue. I agree that the press and congressmen should encourage farmers to try it.

Minnesota MRS. FLOYD WALDO

Greyble McFarland of Guy McFarland & Sons, Indianapolis, says...

"DE LAVAL IS A DEPENDABLE, EFFICIENT PARTNER.."

Started in 1926 with six female calves . . . the McFarland farm today has over 400 Guernseys . . . is one of the nation's outstanding dairy operations.

Mr. McFarland writes: "Throughout the years De Laval has been a constant, dependable and efficient partner in all of our operations. Even prior to the installation of our first milking machine, the De Laval Hand Separator made it possible to furnish premium sweet cream to Indianapolis candy kitchens. In our processing operation, first were the power separators and clarifiers, and now, the advanced series 390 Tri-Process De Laval.

"It was natural for us to ask De Laval to design and install our Combine Milker-Bulk Tank operation in the new production unit last year.

"From time to time we have given silent thanks for the De Laval helpers that aid in all of our milk production and processing operations. Without them, our dairy could not economically survive, without them, the pleasure of work would decline to drudgery. So, after all these years, and especially since January 6, 1956, when we opened our new milking unit, we want to extend our thanks to De Laval for their continuing contributions to our advanced and progressing dairy."

Get all the details on De Laval Combine Milkers . . . mail coupon today.

DE LAVAL

THE DE LAVAL SEPARATOR CO., DEPT. 14-F
Poughkeepsie, N. Y.

Without obligation, send me proof that a De Laval Combine Milker can cut my production costs, increase my milk profits.

I prefer ☐ Separate milking room ☐ Dairy barn installation

I milk about _____ cows.

Name _____

Town _____ RFD _____ State _____

THE DE LAVAL SEPARATOR COMPANY Poughkeepsie, New York • 427 Randolph St., Chicago 6 • DE LAVAL PACIFIC CO. 201 E. Millbrae Ave., Millbrae, Calif.

More grow-power per bale
...A NATURAL RESULT OF MASSEY-HARRIS
LEAF-GUARD DESIGN

Vertical undershot elevator levels out bunches. Leaf-saving solid table bottom.

Proved knotter ties under compression. Triple cord disc . . . accurate, positive.

Enclosed gear drives run in oil bath. Dust, dirt sealed out. Heavy ball bearings.

Needles pass through plunger — not the hay. No lost motion, less wear—smoother.

More protein-rich leaves in every bale . . . more grow-power in every slice — because Massey-Harris *leaf-guard* design protects the leaves every step of the way.

Leaf-guard design starts at the small-diameter pick-up that lifts the windrow a shorter distance. It continues up the undershot elevator . . . through the enclosed cross conveyor with its gentle tumbling action . . . on into the bale chamber where every stroke of the plunger captures a high leaf count to give you better quality hay.

And *leaf-guard design* ties under compression. Babies the leaves but bales 'em tight to take a lot of handling from field to storage. Ties with perfect timing and accuracy to turn out uniform 14 x 18 x 37 inch bales hour after hour.

Ask for a demonstration

Ask your Massey-Harris dealer to demonstrate these big-capacity, leaf-guard balers on your farm. See how they put new grow-power into every bale, how they save more protein-rich leaves. For folder write: Massey-Harris, Dept. F-228, Racine, Wis.

NO. 1 ENGINE-DRIVEN BALER
Powered by a 25-hp air-cooled engine, the No. 1 Baler turns out up to 2000 bales a day depending on moisture content.

NO. 1 PTO BALER
Custom baler capacity at low cost. Heavy belt-driven flywheel maintains correct power delivery for uniform bales.

Always keep your eye on **Massey-Harris**
TRACTORS • COMBINES • BALERS • CORN PICKERS • IMPLEMENTS

FOR BETTER FARMING JOIN YOUR LOCAL SOIL CONSERVATION DISTRICT

DAIRY DIGEST

W. A. WENTWORTH RETIRES

A widely known and veteran dairy leader, W. A. Wentworth, retired recently as director of industry relations for The Borden Company. Born in New Hampshire and raised in Iowa, Mr. Wentworth graduated from Iowa State in 1910, did graduate work at Michigan State, and then managed registered dairy herds in Iowa for six years.

Following a tour of duty as county agricultural agent, he became secretary of the Iowa Dairy Council, the Iowa Milk Distributors Association, and the Iowa Creameries Association. In 1923, he moved to Ohio to become secretary of the Ohio Dairy Products Association, where he remained until 1929 when he joined The Borden Company.

During his years of service on the national scene, Mr. Wentworth has been secretary, treasurer, vice-chairman, and chairman of the Dairy Industry Committee. He has been a director and member of the executive committee of the National Dairy Council since 1937, serving as chairman of the committee from 1950 through 1953.

He has been president of the Dairy Products Improvement Institute since 1947. Currently he is president of the International Dairy Show.

NEW YORK PRICE $3.55

A uniform price of $3.55 per hundredweight was paid for April milk deliveries to 393 approved plants in the New York metropolitan area. The price for March was $3.68 per hundredweight and in April 1955, it was $3.57 per hundredweight.

The producer butterfat differential for April was announced at 5.8 cents for each tenth of a pound of fat above or below the standard 3.5 per cent test.

April milk production and fluid consumption set new records for the month. Production was up almost 4 per cent from a year ago and marketing area consumption increased by slightly more than 4 per cent.

Payment of the uniform price of $3.55 per hundredweight was made for milk testing 3.5 per cent butterfat which was delivered to plants 201 to 210 miles from New York City.

CHICAGO PRICE UP 11 CENTS

Dairy farmers who shipped milk to the Chicago market during April received prices 11 cents higher than during March.

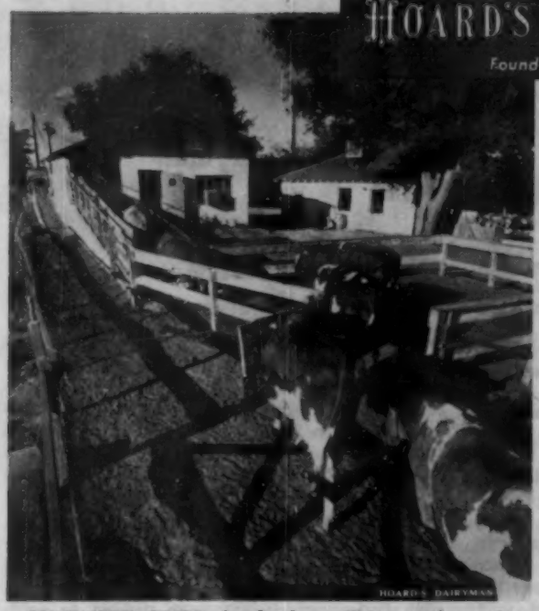
Two prices were paid farmers for April milk. The base price was $3.64. The excess price was $3.24. These prices were for 100 pounds of milk, testing 3.5 per cent butterfat delivered to the 70-mile zone.

Harry Edwards, director of marketing for Pure Milk Association, said that the April prices are 23 cents above April 1955.

The cause of the increase was the higher prices paid by dealers for milk used for bottling and similar purposes. This price was increased by 46 cents on April 16 as the result of bargaining by Pure Milk Association.

Prices on the Chicago market will be helped later in the season by the increase in the support prices for manufactured milk, Edwards said.

HOARD'S DAIRYMAN
Founded in 1885



GUERNSEY HERD heads for milking parlor. At right is creamery; 2 men bottle 800 gallons daily.

PLEASING TO THE EYE is the interior of the drive-in store. Three over-head doors make up the entire front. Dairyman T. W. Allen is shown waiting on a customer.

He deals directly with his customers

New Mexico dairyman markets 30 per cent more milk than he did a year ago, thanks to his retail operation.

by Robert Stearns

NIGHT VIEW of Allen Acres drive-in. Stays open until 10 p. m. daily.

REALLY, I'd like to have you deliver our milk, Mr. Allen. But I just can't afford those big monthly milk bills. I'd rather get my milk at the store for now, and pay as I go."

That's the type of answer that T. W. Allen, dairyman of Las Cruces, N. M. often received when he was out knocking on doors, handing out free bottles of Allen Acres milk, and soliciting housewives for his home delivery route not long ago.

Allen Acres milk was being offered at some of the local stores, but other brands were, too, and Allen knew he wasn't getting as much of the "go-to-the-store" business as he'd like for his milk. He also knew that his newly-established herd was experiencing an upsurge in young heifers, pointing toward a large increase in milk output for which he'd have to find a market soon.

Then on a 1953 trip to California, the New Mexico dairyman picked up an idea that paid off. He noted for the first time, that phenomenal new retail operation in the Los Angeles area—the drive-through dairy store, where cases of milk are loaded into customers' cars which at peak hours are often lined up for blocks. "Maybe that's my answer for increased business," Allen said to himself, "I'll open up a store for my milk, too."

Markets 30 per cent more . . .

And he did—a spanking modern building on a well-traveled street in his home town of Las Cruces. With his store, he markets 30 per cent more milk than he did a year ago. Thanks to his retail operation, he's receiving a good deal more than the "less-than-half-of-the-consumer - milk - dollar" that the average United States milk producer gets. And right now, he's working on a new "profit-maker" idea — marketing his culled cows as take-home barbecued beef through his store outlet.

"There's an organic connection between a dairy farm and a retail store to market surplus milk and beef," Allen says. He feels that many more dairymen could take advantage of such a set-up, open their own stores, and cut in on that sizeable wedge of the consumer milk dollar that now goes to the middleman.

A retail store is an effective "backstop" for a home delivery route, Allen points out. If a housewife is wary of becoming involved with big monthly delivery bills, she can always go to Allen's drive-in for regular small pickups—and she does.

Also, as dairymen know, route customers are prone to underestimate the amount of milk they need, when ordering delivery. Often route customers have to go out and get extra bottles to fill up the refrigerator, especially on weekends. With his store, Allen feels he is salvaging a good part of these extra purchases by his customers, which heretofore were largely lost.

The drive-in helps build the home delivery route, too. Folks who stop by and pick up samples of Allen Acres milk at the store often decide to have it delivered.

Dr. Ted W. Allen is a city man turned farmer. Schooled as a chemist, and formerly a college professor at Oklahoma A. & M., he moved to southern New Mexico 10 years ago to try his hand at dairying. Today his purebred Guernsey herd totals 150 head.

As befits the president of his local D.H.I.A., Allen has a high-producing herd. His cows average slightly more than 400 pounds of butterfat and nearly 10,000 pounds of milk annually. The herd has turned out one national production leader, four national class leaders, and many state champions.

Allen takes his milk all the way — from cow to creamery to customer. His 70-acre farm is a compact unit, laid out with an eye to efficiency. Buildings include a milking parlor with three stanchions and three levels, where one man can milk 20 head an hour; and a modern creamery, where two men can pasteurize and bottle 800 gallons a day. Ray Koger, herdsman, and three employees handle the herd and all milking and bottling.

Allen's home delivery service consists of two routes operated by one truck, a driver, and a helper. The Allen Acres truck service can deliver up to 200 quarts an hour three times a week. Delivery begins at 2 a.m. and is usually over by 8 a.m. Last month's delivery topped 20,000 quarts on the retail routes. Allen provides an incentive system for his routeman, to *(Turn to page 609)*

Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

AVOID HAY MOW FIRES

The biggest cause of fires in barns is putting up hay not properly cured.

University of Illinois engineers warn farmers to be especially cautious that hay be from 16 to 20 per cent moisture content before put into the mow.

Your hay is dry enough to store when it almost feels brittle as you handle it, unless

you have facilities for mow drying. Then the moisture can be 35 to 40 per cent.

The second big cause of spontaneous combustion in stored hay comes from rain leaking through holes in the barn roof.

Heating in hay starts from action of bacteria working on the plants. Bacteria need at least 16 per cent moisture to live. If the moisture in your hay is lower than that when you store it, the bacteria can't live and will not cause heating.

To check for heating hay, you can make your own probe out of lengths of pipe. Push the pipe probe down into the interior of the hay, and drop a thermometer, which registers at least 225 degrees, down the pipe on a string.

If the temperature of the hay is 190 degrees or higher, it is time to move the hay out before you lose your barn. When hay gets that hot, it generally keeps right on heating until it hits 400 degrees or more and breaks into flame.

When you remove hot hay from a barn, be sure to get it far away from any buildings. You can count the crop lost, but it is better to lose a crop than to lose a barn.

STEWART'S DISEASE THREATENS CORN

A plant pathologist with the Illinois Natural History Survey predicts that Stewart's disease, bacterial wilt of corn, probably will occur over the entire state of Illinois this year and be destructive further north than in 1955.

The forecast is based on the close relationship that appears to exist between the amount of disease which is expected to develop during the coming summer and the temperature of the winter just past. Two principal types of damage to corn are produced by Stewart's disease. They consist of an early-season wilt and death of plants, especially in sweet corn, and a late- season leaf blight which may be severe enough to cause premature death of plants.

The bacteria that cause Stewart's disease are carried in the bodies of adult corn flea beetles. Research conducted indicates that dieldrin is very effective in controlling the beetle. It is recommended that, in areas where the beetles are constantly a problem, 1¼ to 1½ pounds of actual dieldrin be used per acre. It should be worked into the upper few inches of soil just before or after corn is planted.

Where soil treatment is not made, some protection will be gained by an application of ¼ of a pound of dieldrin or 1½ pounds of DDT banded over the corn rows as a foliage spray when the beetles first appear on the young corn plants. Additional treatments may be necessary if the beetles persist.

The most severe damage from the wilt phase of Stewart's disease usually occurs in the earliest planted corn. By avoiding unwarranted early planting of sweet corn and working dieldrin into the soil, growers will exercise two important control measures to help prevent loss from Stewart's disease.

DIET FOR YOUNG PUPPIES

An Illinois veterinarian suggests the following diet for dogs up to 4 months old: ½ to 1 cup of cooked or baby-type cereal and the same amount of milk each morning, noon, and evening; about 1 teaspoon of cod-liver oil in the morning in winter if the pup is kept indoors; 2 to 3 tablespoons of cooked hamburger or liver at noon; 2 tablespoons of cooked vegetable and 1 boiled egg in the evening; and ½ to 1 cup of milk in late evening.

When the dog is about 4 months old, you may switch to a commercial dog food. Puppies usually prefer a moist canned food rather than the dry type. You can cut feedings to 3 a day at 4 months of age, to 2 feedings a day at 6 months to 1 year, and to 1 feeding daily after 1 year. Amounts of feed depend on the size of the dog and the exercise he gets.

HOW TO CONTROL CHIGGERS

Even though chiggers are so small they can barely be seen with the naked eye, they can make life plenty uncomfortable for you. This small red pest makes quite a nuisance of itself in many areas of the country during the hot summer months.

Chiggers are not adult insects at all, but are the larvae form of certain mites. Their favorite places of attacking are around the tops of shoes or socks or around the waistline where the belt is tight. The pest attaches itself to the skin, causing red welts.

One way to cut chances of discomfort is to take frequent shower baths and use plenty of soap. This should be done especially after being in an infested area. When the red welts appear, there is little you can do except live it out.

To eliminate chiggers in some infested areas, a 5 per cent chlordane dust can be used. It takes about 20 to 25 pounds per acre, or about 10 ounces per 1,000 square feet. If you have chiggers on your lawn, you can control them by buying chlordane dust; it will also help to control grubs and ants on the same area.

TRACTOR CAN RUN MILKING MACHINE

In case of electric power failure, it is possible to use your tractor to operate the milking machine.

A tractor intake manifold develops a vacuum of 18 to 22 inches. Since only 10 to 16 inches of vacuum is necessary to operate a milking machine, your tractor can solve the problem of a power failure at milking time.

To equip a tractor for emergency milking, a Rutgers University engineer suggests:

Drill a hole in the intake manifold and thread it for one-eighth or one-fourth inch pipe fitting which has been welded or soldered to a garden hose connection. Leave the original vacuum tank in the milker line because it helps maintain constant vacuum.

Be sure to keep the relief valve in the milker system operating, since a tractor will produce a higher vacuum than the milker requires. It may be necessary to keep a close check on the vacuum gauge and the rate of pulsation while the milker is being operated and adjust tractor speed accordingly. Slow engine speeds give the greatest vacuum.

The stall cocks should be opened gradually because a sudden change in the line vacuum may stall the engine. To avoid fouling the tractor engine by continued slow operation, keep the radiator temperature at near boiling and run the engine at higher speeds for a short time after milking.

MOWERS KILL MANY PHEASANTS

An Ohio State University conservationist says mowing machines kill or maim 6 of each 10 pheasants nesting in hay fields. Since most hen pheasants make their nests in hay fields, the cutter bar is the biggest obstacle to increased pheasant production.

Farmers who prefer to harvest pheasants with shotguns rather than mowing machines

should use a flushing bar. It saves hens and boosts pheasant production, by frightening them off the nests before they are caught in mowers.

Field studies have shown that flushing bars reduce pheasant losses one-half. While mowers may destroy the nest, if the hen is not injured she usually will build a new nest in a safer place and rear a brood.

A flushing bar is a simple device that is easy to make and use (see Hoard's Dairyman, page 489 of May 10 issue).

Cool barn
with windows and fan

These Californians regulate temperature with various systems of windows and fans. The type used depends on environment and type of barn structure.

by Dick Elmore

SINCE high temperatures are a problem in California, dairymen have devised various methods by which they can regulate temperature through use of windows.

A series of lightweight windows covered with glass-screen are used by Wallace Lindskoog. The combination of a rope, 2 small pulleys, 2 eyes, and 1 screw make it possible to open and close the windows easily.

The window frame is fastened to the window casing at the top by 2 hinges. In the bottom of the window frame are 2 eye screws. A lightweight rope or heavy cord is fastened to the eyes. This rope passes upward through 2 pulleys on a ceiling beam.

Fastenings are so spaced that when the window is closed the rope or cord pulls into a snug position from eye screws to pulleys, and between pulleys.

To open the window, the rope extending across the top between the 2 pulleys is grasped and pulled down. This raises the window. When the window is in horizontal position, the rope is swung around under it and hooked into a hook on the lower part of the window's frame. Thus, the rope holds the window into a locked open position. To close the window, the rope is unhooked and the rope is allowed to go back into position that it assumes when window is closed.

Air circulator cools barn . . .

Dick Hart and Olney Kendall take advantage of electric power to cool their barns. Kendall has a large, 30-inch blower fan mounted 3 feet above the barn floor at one end of the barn pointed toward a doorway at the other end. A 1/3 horsepower motor causes the fan to send air through the barn, which vaporizes water on the cows and barn floor, thus giving a cooling effect. The wet floors are due to washing the animals in the barn. Kendall reports the fan lowers temperature from 10 to 15 degrees.

Since Hart does not wash his cows in the barn, he has no trouble with excessive moisture. In one end of the barn, just under the ceiling, he mounted a squirrel type air circulation unit, powered by a 1/3 horsepower electric motor, capable of putting out 4,500 BTU's. The unit is mounted on a framework of two 3x4's hung by chains from the ceiling and a cross frame of 2x6's. This cooler gives off moist air which cools the barn.

Windows for air and sunlight . . .

Alfred Crawford has a row of windows along 2 sides of his dairy barn. Window coverings, made of tongue and groove, provide a solid cover. It sets on the inside of each window frame and is hinged at the top of the window.

To open the windows, the cover is lifted and pushed upward. Two spring latches on a ceiling board catch, holding the covering up from the window opening. To close, the cover is lowered after pushing up on it to release the catches. Thus, they are out of the way. There is no sliding, no sticking, or flopping of unsecured covers.

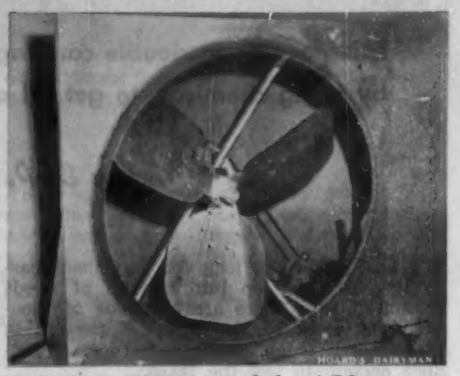
In the Pete Hawkins barn, a sliding glass paneled window is located on the north side. It can be opened 1 inch or 30 inches, as weather dictates.

On the south side of the barn is a series of windows 6 feet long, 2 feet high, covered with glass-screen. Each unit can be removed during the summer in order to take full advantage of the prevailing south breezes. They are nearly always kept in place during winter months, except on bright, sunshiny days, when they are removed. If it is cold at milking time, they can be put back quickly.

Frank Peters prefers his system in which a series of steel sashed windows are located on both sides of his barn. Half of each window is arranged so it can be opened at any angle to control breezes. During hot weather they are used to cool the barn, while during winter they are closed to give added warmth.

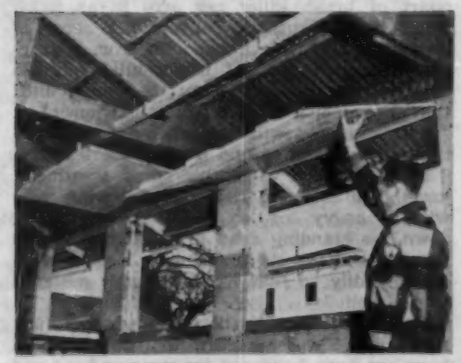
Any one of many systems can be used; the one to choose depends on environment and structural conditions. **THE END**

WINDOW RAISING and closing is an easy matter on the Wallace Lindskoog dairy using a lightweight rope and a system of pulleys.

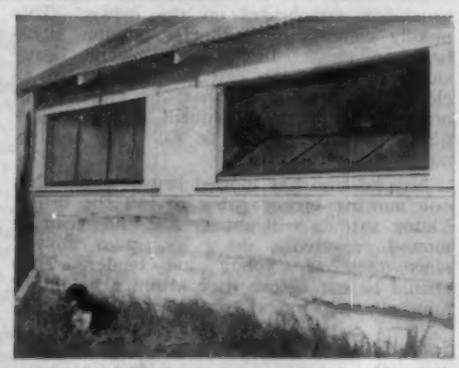


ELECTRIC FAN powered by 1/3-horsepower motor lowers the temperature from 10 to 15 degrees in the Olney Kendall dairy barn.

AIR COOLER gives off moist air which cools the barn owned by Dick Hart. The result is better environment for animals and man.



ROW OF WINDOWS on two sides of Alfred Crawford's dairy barn provides good ventilation. They are held securely to ceiling when open.



REMOVABLE glass-screen windows aid ventilation on the Pete Hawkins dairy. They can be opened 1 or 30 inches, depending on weather.

STEEL-SASHED windows are preferred by Frank Peters. Opened vertically, they can be adjusted at any angle for good ventilation.

For better pastures - kill weeds and brush

It is possible to double carrying capacity of permanent pastures by using chemicals to get rid of weeds, brush, and small trees.

by E. P. Sylwester

IT DOESN'T take long for permanent pasture to grow up into a mess of weeds and brush. There are hundreds of thousands of acres of this so-called pasture in the country today. Most of it doesn't produce enough to pay the taxes.

How do we clean up this tangle of growth and make the land a profitable working part of the farm? In most cases, we would combine the use of a mower, a brush-bar attachment on the mower, or a "brush cutter," with repeated chemical applications.

But let us look at some specific problems. After all, they may vary all the way from ragweed to husky young hickory trees.

If the land can be clean cultivated, it will not be too difficult to solve our problem. Plants such as gooseberry, hazel brush, buckbrush, bramble, and sumac can be put into clean-cultivated crops for one or two years in succession. The area can then be reseeded to more desirable grasses and legumes. This method will control brush effectively.

We might as well face up to realities, however. This weed-and-brush land is usually in fields which either cannot or should not be plowed. Our job here is to keep the grass and legume vegetation and yet get rid of the weeds and brush. After they are eliminated we have plenty of time to add lime, fertilizer, and renovate with more desirable legume and grass seeds.

If annual weeds are the only problem, one or two mowings or sprayings throughout the season may be sufficient to prevent seed production. Following this program for two or three years in succession will find the majority of the weed seeds depleted from the soil. Existing grasses can then offer good competition to the remaining seedlings.

One pound of 2,4-D per acre . . .

Where these annual weeds are in a pasture which is primarily grass, we should use 2,4-D as a spray. The preferred rate of 2,4-D is one pound per acre when the weeds are young and in an active growing condition. If practiced for one or two years in succession, such an application offers a quick and feasible method of control for most broad-leaved weeds.

Although 2,4-D is not poisonous to livestock, it is preferred to keep animals out of sprayed areas until the weeds are completely dead. Keep animals out of sprayed areas by means of an electric fence dividing the pasture. After a week or so, put the animals into the sprayed area while the other portion is being sprayed. The presence of such potent poisonous plants as pokeweed, black nightshade, wild perennial groundcherries, whorled milkweed, two-leaf germinating cockleburs, etc., make precautions desirable.

Where we have a lot of white Dutch, Ladino, or alsike clover present, we may limit our program to mowing which will not hurt the legumes. Occasionally, of course, there may be a patch of perennial weeds such as Canadian thistle, bindweed, or perennial sow thistle. Here we may use spot or area spraying and sacrifice the legumes in these areas. They can be reseeded later, or they may volunteer after the perennial noxious weeds have been eliminated.

Now let's make it a little more difficult and assume that we have small brush in the pasture. If it is nothing more than hazel brush, buckbrush, or brambles, we can use a brush-bar attachment on the mower. This merely consists of a shorter, stouter sickle bar and sickle; heavy guards; and heavy sickle sections. We can mow the brush as closely as possible so that the stumps will not interfere with subsequent grazing. Clippings, if many, should be raked up and removed from the area.

Anyone who has mowed brush knows that one mowing is not going to kill the brush. Young sprouts will appear and these can be mowed repeatedly, using a regular mower, since they are young and tender. They should be cut before they attain a height of approximately a foot to 15 inches.

Spray at 12 to 15 inches . . .

Perhaps a better method would be to spray the regrowth when it is approximately a foot to 15 inches high. For such spraying, if you are using a four-pound 2,4-D material, we would recommend one quart of 2,4-D per acre. This means that you will use approximately one pound per acre of active killing ingredient. Spraying should be repeated whenever the regrowth is approximately one foot to 15 inches high.

Another useful tool in clearing small brush infested areas is the regular brush cutter adapted for this specific purpose. These brush cutters are consistently being built much stronger and heavier than the cutters for cornstalks used by many farmers.

The advantage of the brush cutting machine is that it leaves the brush shredded to such an extent that removal from the area is unnecessary. The brush merely rots away and adds humus material to the area.

If you use foliage sprays for the regrowth, we would add one-quarter of a pound of a "good wetting" (detergent) agent to every 25 gallons of the spray solution. This is especially necessary on buckbrush, which has a very waxy leaf when it is young. Hazel brush, too, requires a wetting agent because it has a somewhat hairy and difficult-to-wet leaf surface when it is young. Ironweed, whorled milkweed, prickly ash, and others also have waxy leaves.

Of course, the quickest and cheapest way to make inroads on weeds and brush is to apply a foliage spray over the entire area. The trouble here is that we still have a "porcupine quill" field which hampers our grazing and perhaps our renovation programs. This is why we prefer to cut off the brush, remove it, and then begin our spraying.

If you do not like the idea of mowing that pasture and wish to start out with chemical sprays, use one gallon of 2,4-D concentrate (4 pounds active ingredient per gallon) plus some wetting agent per 100 gallons of water. The plants should be sprayed to runoff. Anything that actually runs off is wasted, but spray until thoroughly covered.

When spraying on an acre basis, use the wetting agent and the 2,4-D at the rate of one quart of 2,4-D concentrate per acre in as much water as the sprayer delivers per acre. It should be sufficient, however, to wet the brush.

When to use "brush killer" . . .

When buckbrush and hazel brush are being sprayed, 2,4-D alone is an effective chemical. The same applies also to most perennial pasture weeds. When there are mixtures of brush, however, such as buckbrush, hazel brush, wild plum, gooseberry, oak and hickory sprouts, and elm seedlings, we recommend a combination of 2,4-D and 2,4,5-T, commonly referred to as "brush killer."

If you spray on an acre basis, use one quart of brush killer per acre in as much water as the sprayer delivers per acre. If spot spraying, with a handgun from a tractor, use one quart of brush killer per 25 gallons of water and spray the plants until they are moist. Again, the addition of a "wetting agent" will help coverage, penetration, and absorption and result in better kills.

Many farmers, after this spray treatment, have gone into the field the following year with a heavy log or iron beam to break down the standing dead brush. Once on the ground, the insects and fungi decompose it quite readily so that it adds humus material to the soil.

Foliage spraying is best done during June and July. The leaves are well out but still have not been hardened by summer heat and drouth to the place where chemical absorption is hindered. Single *(Turn to page 599)*

The author is professor of botany and plant pathology and extension botanist at Iowa State College.

Plant more trees around your farm home

The right trees in the proper places make a beautiful farmstead. Here are some of the specific purposes for which trees are used.

by H. R. Kemmerer

YOUNG TREE is inexpensive and easy to plant but keep sun, view, and house framing in mind.

TREES are a valuable asset to farm living. When they are absent the farmstead becomes a barren, unattractive, uncomfortable place to live and work.

The mere presence of trees on the farm does not, however, necessarily mean that the area is attractive and protected from the sun and winds. Therefore, you should check the tree situation on your own farm to determine if any more are needed, or if there are any that are unnecessary and undesirable that should be removed.

The first thing to check is the amount of protection you are getting from the elements. Are you getting adequate shade around the house and farm buildings? Also, does your farm have adequate protection from the cold winter winds or hot dry summer winds if they happen to be a problem in your area?

Provide enough shade . . .

Adequate shade for the house can be provided by placing a tree on the southeast, southwest, and west corners of the house. They should not be placed in a straight line.

The three-tree arrangement can be used regardless of the direction in which the front of the house faces. An additional small tree may be used to help keep the sun out of the picture window if it faces east or west. The tree is usually placed five or ten feet from the house. No tree is necessary for a window with a south exposure because the sun is directly overhead and thus doesn't shine in the windows.

The kinds of trees to use for shade around the house will depend upon the type of house you have. If it's a one-story structure, trees like sugar maple, green ash, or others with a round crown should be used. Round-crowned trees and those with wide-spreading branches (hackberry and American elm) may be used around taller houses.

Wide-spreading trees generally are not used around a low house because the spreading branches tend to make the house look squatty. Trees with a pointed crown, such as pin oak and Norway spruce, are not considered good shade trees because the bulk of their branches are close to the ground where they don't have much shade value.

When planning for shade on the patio, remember that with proper tree placement, you can get shade from the shadows created by the tree as well as underneath the branch spread. Trees with wide spreading branches are best for producing shade on the patio. However, if your house is low, a round-crown type would be more desirable.

Don't overlook the possibilities for establishing shade in the farm court. The tree or trees will make an ideal spot for parking equipment out of the hot sun when you are in for lunch or making repairs. If you don't have a farm court, try to locate a tree close to the machine shed.

If your farm is exposed to cold winter winds, you may wish to establish a three-row evergreen windbreak on the north and west sides of the farmstead.

Evergreens are used for wind protection because they maintain their foliage in the winter. Deciduous trees (those that lose their leaves in the fall) are not very good unless windbreak area is several hundred feet wide.

Douglas fir and Norway spruce are two of the best evergreens to use in windbreaks. Both retain their lower branches till old age, even under fairly crowded growing conditions. The usual spacing for both trees is 14 by 14 feet with the trees in the middle row alternated with those on the outside. The windbreak should be close to the farmstead but 50 feet from the closest building.

Frame the house . . .

Your tree selection and arrangement should not stop after you have taken care of shade and wind. You will want to use trees to help add to the attractiveness of your setting. If you don't already have the view of the house from the road framed, you should plant a tree on either side of the front of the house. They may be placed approximately in line with the house or 10 to 15 feet in front of it. If your house is approximately 100 feet from the road, you can develop additional framing by placing a tree between the road and frame tree next to the house.

In addition to framing the view to the house, you will also want to provide a frame for the farm pond or other attractive setting that can be seen from the house. A framed view of cattle grazing in a pasture is certainly an asset to living on a dairy farm.

Trees with rounded, spreading or pointed crowns may be used for framing purposes. Norway maples and others with dense foliage are good for framing the view to the house. Their foliage helps to keep the eye from being attracted to features behind the house. Prairie views can be effectively framed with white pine, flowering dogwood, or other trees with horizontal branches. The line of the prairie is repeated in the lines of the tree.

Provide a back yard . . .

If your house doesn't already have a mass of foliage showing over the roof as you look at the setting through your framing trees, you should plant a tree or two behind it. The foliage helps make the setting more interesting because it softens the stiff line of the roof and also helps keep attention on the house and not on the sky. If the back of the house faces north, the trees should be placed at least 50 feet from it. If it faces in any other direction, the shade trees will provide the needed background.

Trees with a wide-spreading crown are usually preferred for providing background because of their expanse of foliage. However, most trees may be used. Pointed-crown types are not used because of their stiff symmetry which is not in keeping with the informal design and arrangement of most dairy farms. Tall, fast-growing trees like the sycamore (American planetree) are used to provide background for tall houses.

When selecting trees for shade, background, and framing, you will want to make sure the trees are well adapted for the function they are to serve. Several of them will also undoubtedly have appealing foliage, flowers, or other ornamental characteristics.

If you have a fairly large lawn area, you can include a few trees in your setting that have some outstanding ornamental value. These trees are generally referred to as specimen trees. Blue spruce, white fir, weeping willow, flowering crabapples, horsechestnut, gingko, and European weeping white birch are a few examples.

Specimen trees should not be placed in the front (public) lawn area because their ornamental characteristics draw attention to them and thus make them compete with the view of the house. The best place to put them is in the private lawn *(Turn to page 586)*

The author is an instructor in landscape gardening, University of Illinois.

Drouth area farmers . . . overfeed protein

A check of Oklahoma dairymen reveals nearly half were overfeeding, with some feeding double the amount needed.

by Magnar Ronning

LOADING MORE FEED than needed was common in Oklahoma during drought years. Feed costs were unnecessarily high.

WHAT should be done about dairy feeding programs under drouth conditions? Dairymen in the Southwest who have completed four years of history-making drouth offer a variety of answers.

Their answers are tempered by resignation to the fact that feed needs to be purchased and shipped in over long distances—not just concentrates, but roughages as well.

In spite of certain measures to relieve the costs, feed bills mount mighty fast under such conditions. With sinking morale the dairyman is likely to give his shoulders a defeatist shrug and say that nothing can be done about it, so what's the use?

Information gathered in a survey of nearly 150 Oklahoma dairymen during the past year indicates that there is much that can be done. Much must be done to improve feeding practices in order for dairymen to survive, not only during drouth conditions but under normal periods as well.

40 per cent over-feeding . . .

Contrary to what might be expected from the findings of a survey made under these conditions, over-feeding was found to be more common than under-feeding. Only 13 per cent of the participating dairymen were feeding less than required amounts of energy while 47 per cent were feeding at an adequate to liberal rate. The remaining 40 per cent of the operators were over-feeding with eight of these individuals feeding twice as much energy as needed by their cows.

A high rate of grain feeding seemed to be responsible for most over-feeding. Nearly one-half of the dairymen, who were feeding more than the required amount of energy, fed 1 pound or more grain per pound of milk produced.

Only 3 per cent of those dairymen feeding at reasonable energy levels fed grain at the rate of 1 to 2, while over 50 per cent were feeding 1 pound or less grain per 3 pounds of milk produced.

Complete information was available on 141 dairy farms involving a total of 3,095 cows which had an average daily production of 26.8 pounds milk. It was found that these cows were fed at an average rate of 1 pound grain per 2.6 pounds milk produced.

A very startling finding was the marked over-feeding of protein. Liberal protein feeding may be characteristic in areas where roughage programs are primarily built around alfalfa hay, but under present drouth conditions high-protein feeding is especially disturbing since it involves a high percentage of purchased protein.

Fifty-six per cent of the dairymen involved in this study fed from one-fourth to twice as much protein as required while another 16 per cent fed from twice to three times as much as needed. Only 8 per cent of the farmers surveyed fed less protein than required and most of these were not under-feeding seriously.

Most of the operators that were feeding protein at reasonable levels were using combinations of legumes and non-legumes in their roughage programs. As protein feeding rose above recommended levels there was an increased number of farmers depending entirely on legumes for their roughage. To complicate this further, many of these men were using concentrate mixtures which contained unreasonable amounts of protein.

Feeding unbalanced rations . . .

Unbalanced rations appeared to be the rule rather than the exception among the dairymen surveyed. Only about one-fourth of the dairymen feeding reasonable levels of energy had well-balanced rations, and only one-fifth of those which were over-feeding. This shows that the high rate of protein and energy feeding was not influenced by liberal offering of balanced rations, but that protein and energy were being supplied independently in most of the rations.

Any number of interesting case histories could be discussed, but the three presented below demonstrate very well the opportunity for some men to improve their feeding practices.

One farmer posed the question as to how some money could be made in the milk production business. An analysis of his operation showed that his cows produced an average of only 17.8 pounds of milk daily. He was feeding, liberally, hay which consisted of one-fourth grass and three-fourths legume and, characteristic of the drouth area, he had neither silage nor pasture. His cows consumed an average of 21 pounds of 14 per cent concentrate daily.

This program resulted in 253 per cent as much protein as required, 188 per cent as much energy as required and a return of only 0.8 of a pound of milk per 1 pound concentrate fed.

Two other dairymen had practically identical facilities. Both had about the same type of cows of comparable production. They fed non-legume hay at similar levels. Each had limited small grain pasture available and both fed a 16 per cent concentrate mixture.

Farmer A fed an average of 5 pounds concentrate per cow daily, and his ration furnished 107 per cent of the calculated protein requirement, 103 per cent of the necessary energy and returned him 4.7 pounds of milk per 1 pound of concentrate fed.

Farmer B fed three times as much concentrate which resulted in his ration furnishing 224 per cent as much protein as needed and 173 per cent of the required energy and in a return of 1.4 pounds milk per 1 pound concentrate fed.

Which dairyman was suffering most from the drouth?

Do more figuring . . .

Data gathered in a mail-order type of survey such as this would not be expected to withstand a critical statistical analysis such as applied to research data collected under controlled conditions. The summary, however, has sufficient authen- *(Turn to page 599)*

The author is an associate professor of dairy husbandry, Oklahoma A & M College.

SPRAYING OATS to kill weeds with a boom-type sprayer attached to front of tractor. Booms can be raised when turning or passing through gates.

How to care for your sprayer

Keep tank, boom, and nozzles clean at all times and save many dollars in repair bills. Keep your sprayer operating by following precautions as listed below.

by Wendell Bowers

THE sprayer is getting to be almost as common on farms as the tractor or plow. It can be used for a wide variety of jobs including insect and weed control, or for washing and cleaning in buildings. With a few adaptations it can even be used for applying liquid nitrogen.

There is a wide variety of sprayers in use. They vary from a simple pump and hand gun to a self-propelled model that costs $1,000 or more. But all sprayers have one thing in common. They need special care if you expect them to provide good service over a period of years. Let's look at the various parts of an ordinary sprayer to see what should be done to give it the care it needs.

The heart of a sprayer is the pump. Most row crop sprayers use a power-take-off pump, but the trailer type or self-propelled models usually have a separate motor. There are two basic kinds of pumps. One is a piston or plunger type called a high-pressure pump. These are used to best advantage where much livestock or orchard spraying is being done.

The other type, which is the most common, is called a low-pressure pump and can be recognized by such names as vane, nylon roller, impeller, and internal or external gear. Most of these pumps have a maximum pressure of from 200 to 300 pounds per square inch.

Since most row crop spraying is done at rather low pressures (30 to 70 or 80 pounds per square inch), low-pressure pumps are very satisfactory for ordinary farm spraying. Continuous operation of these pumps at their maximum pressure will usually result in a loss of pressure and eventually they will even lose their prime. The same thing will happen if abrasives are allowed to pass through the pump. Consequently, it is a good idea to have a screen on the suction side of the pump. A 50-mesh screen is usually ample to take out abrasives that will harm the pump.

Use clean water . . .

It will also help to use only clean water in mixing up the chemical solutions. A good rule to go by is to use only water that looks clean enough to drink.

These power-take-off pumps will give longer life if they are not fastened too securely to the tractor. Instead, it is best to simply insert the pump on the power-take-off shaft and use a chain or light metal strap to hold it down. If the pump is not allowed some freedom of movement, misalignment and rapid wear of bearings results.

The sprayer tank is often a source of a lot of trouble. Steel drums may contain rust and scale which will plug the nozzles or damage the pump, so be sure to clean them thoroughly before using on your sprayer.

If your sprayer tank does not have a mechanical agitator, be sure the by-pass from the pump is returned to the tank in such a manner that agitation is provided. Agitation is needed to keep the chemical solution well mixed and to prevent rust and scale from accumulating in the bottom of the tank.

Aluminum tanks are much more expensive, but do not corrode, so you may be interested in buying one if you have a lot of spraying.

Ordinary rubber hoses are not satisfactory since many of the spray solutions have an oil base. Therefore, it is necessary to use an oil resistant hose such as neoprene. Neoprene is marketed under several different trade names so be sure to check with your dealer when you buy the sprayer.

Less corrosion with aluminum . . .

Spray booms may come in one, two, or even three sections. Earlier models used galvanized or black iron booms, but many of the later ones have gone to aluminum because of the lighter weight. It also results in much less corrosion and scale formation, the main source of plugged nozzles.

It is a good idea to have a screen in the line next to the boom. This screen should be finer than the one in the suction line. Somewhere between 70- and 100-mesh should be about right. It should be kept in mind that the more you can do to remove dirt and scale, the less trouble you will have with the nozzles clogging.

There is a wide variety of nozzles you can use, but most produce either a fan or hollow cone-shaped spray pattern. The nozzles are given a capacity rating according to how much they will apply at a given speed and pressure setting. Four miles per hour and 30 or 40 pounds pressure are commonly used.

The nozzles can be used to apply slightly more or less than rated capacity by varying the speed, pressure, or both. In order to change the capacity of a nozzle, it is usually only necessary to change the tips. They are rather inexpensive so you may want to have several sets of tips available and change them accordingly for different operations.

For instance, most weed spraying is done at 10 gallons per acre and insecticide applications vary from 5 to 20 gallons per acre, so it may be advisable to have as many as three or four sets of tips.

Check a spray chart . . .

Now for some suggestions for different jobs. Let's suppose you want to spray a patch of weeds in the barnlot. Place the nozzles directly in the boom and adjust the boom so the nozzles are about 20 inches above the weeds you are trying to kill. Use the combination of pressure and ground speed to give the desired rate of application. To do this you will need to check a spray chart which can be furnished by the dealer who sold you the nozzles. You would use the same adjustment of the boom for spraying a legume crop for insects.

If you want to use your sprayer to spray for weeds in the corn field, you will need to use boom drops in order to apply the chemical down in between the corn rows. Although tests have shown that corn is somewhat resistant to weed killers, there have been circumstances where farmers have lost up to 90 acres of corn. They used too heavy a rate of application and didn't use boom drops, thus spraying directly onto the corn plants.

Boom drops or boom extensions, as they are sometimes called, will let you get the spray material directly on the weeds and have very little on the corn. If you have a sprayer with 20-inch *(Turn to page 595)*

The author is a member of the agricultural engineering staff at the University of Illinois.

Produce seeds with bees

Nearly 80 per cent of all pollination, necessary for the growth and development of crop seeds, is done by honeybees. You can profit by sale of honey.

by Jas. I. Hambleton

TODAY, in certain areas where formerly it was the custom to grow legume seed for a profitable cash crop, the yield is no longer attractive. Yields of legume seed have steadily declined. In some of these areas there is no longer a hive of honeybees per square mile.

Farmers generally have failed to recognize the depletion of pollinating insects and have sought the explanation of declining legume seed yields in soil and cultural practices and the weather.

Approximately 50 of our cultivated crops require insect pollination. Some of the most important plants, such as sweet clover, alsike clover, white clover, red clover, and alfalfa produce hundreds of tiny flowers, each of which must be visited by an insect to produce seed.

In areas where most of the land is cultivated and red clover or alfalfa is the main source of nectar and pollen, honeybees are effective pollinators. It is estimated that honeybees are responsible for at least 80 per cent of all pollination activity.

Furthermore, honeybees are the only pollinators which man has learned to propagate, manipulate, and move from place to place in numbers.

Upset nature's balance . . .

Unmolested, nature provides a balance between plants and pollinators. In wild, undeveloped country, ample opportunity abounds for honeybees and wild bees to nest and multiply. Intensive farming practices, clean cultivation, elimination of wood lots, fence rows, and permanent pasture fields, all tend to destroy the nesting places of both wild and honeybees.

Within a single generation, bumblebees have become scarce where they formerly were plentiful. Bee trees are few in many localities. Modern farming practices and modern farm machinery have upset the balance between plants and pollinating insects. This change has come about gradually without recognition by the farmers themselves.

The blanket application of powerful insecticides over large areas has, in some cases, reduced all insect activity to zero.

The use of insecticides appears to be the largest single factor in upsetting the balance of nature so far as pollination is concerned. It must be agreed, however, that many human lives as well as crops have been saved by the application of insecticides.

To save crops and yet attain adequate pollination, poisonous materials will have to be used with more care and the public and entomologists in particular, must, from here on, concern themselves with useful insects.

Grass fires and the use of chemical weed killers along fence rows and in waste places may reduce the available nectar and pollen supply for the surviving insect pollinators.

Since 1941 some of the best farming areas have turned from legume hay and pasture to crops such as oats, peas, barley, wheat, beets, corn, and rye, none of which produce any nectar. As a result, many colonies of bees have starved where they formerly produced large crops of legume blossom honey.

The average farmer is not a bee expert. Beyond childhood recollections of robbing bumblebees' nests in haying time, or of cutting a bee tree down in a swamp, or of catching a stray swarm that stopped in the back yard, he may know little about bees.

The author is head of the section of bee culture and biological control, United States Department of Agriculture, Beltsville, Md.

HONEYBEE collects pollen from an alfalfa blossom; it then drops the pollen at next flower.

Many people think that bees work for nothing, board themselves, and produce a good amount of honey for their owner to take in late summer. They may even feel that the neighbor's bees are actually trespassing when the insects visit their garden raspberry patch or the home orchard.

Legume seeds are plentiful and the price is down. However, the yield has been steadily declining. The time has arrived when the situation should be faced squarely. Agricultural prosperity is definitely dependent upon adequate pollination. The bee cannot survive in areas of intensive cultivation without a minimum of nectar and pollen resources.

Provide apiary sites . . .

The best help the fruit, seed, and vine grower can give the beekeeper is to be tolerant of his problem, provide a good location for his bees, and keep in mind that the beekeeper is rendering the seed grower or farmer a service more valuable than he is receiving in the way of a free apiary site.

The presence of an apiary should lend encouragement to the growing of legumes and thus both the farmer and the beekeeper profit. Rather than go into beekeeping themselves, many farmers will do well to offer beekeepers inducements for bringing in bees, such as permanent apiary sites.

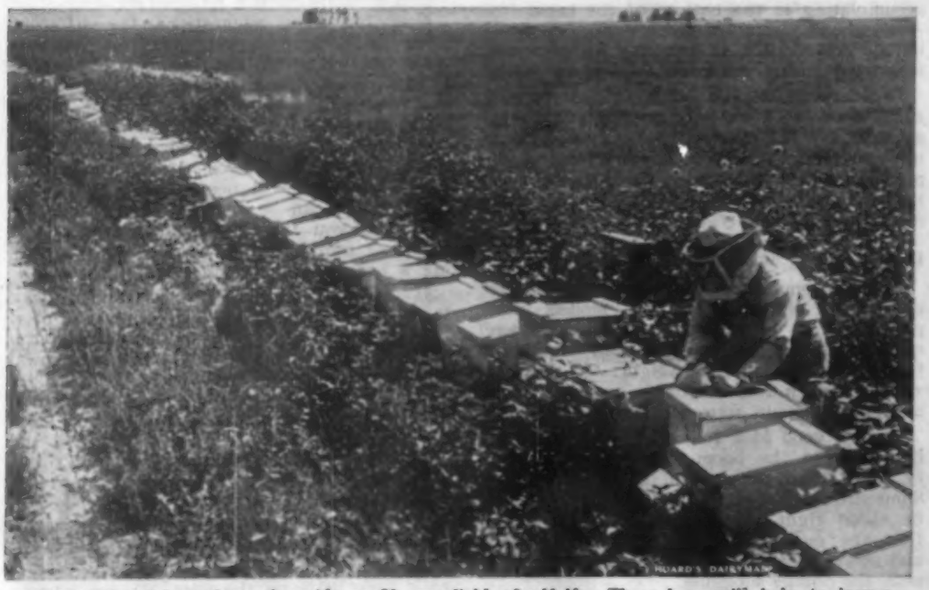
We understand that some 60,000 rented colonies of honeybees are already in the alfalfa fields of Kern County, California.

Beekeeping is a specialized industry, requiring fundamental knowledge of bee behavior and a genuine liking for handling bees. Locating colonies close to available sources of nectar is important, since to insure good crops the bees should be within flying range; this is within one or two miles of an abundance of nectar-secreting plants.

Good beekeeping locations are to be found in practically every state, so that the selection of apiary sites resolves itself in choosing locations where nectar-secreting plants occur in large amounts and where living conditions are desirable.

We believe young 4-H and F.F.A. members should be encouraged to keep bees. Beekeeping is an endless and fascinating study. Bees always function as pollinators, whether they produce a profitable honey crop or not. Anyone with nerve and interest can learn to handle bees.

Practical knowledge gained through a season's work with an experienced beekeeper should be invaluable to a beginner. If a person cannot spend time with a beekeeper, the next best thing is to acquire two or three colonies and do the best he can. A



COLONIES of honeybees alongside an 80-acre field of alfalfa. These bees will help to insure good pollination and seed production, and at the same time they will produce lots of honey.

number of state educational institutions offer resident or correspondence courses in beekeeping.

How to start . . .

A common method of starting a colony is to purchase a package of bees, preferably three pounds, with a queen. Install this package in a hive equipped with frames containing full sheets of brood foundation. Instructions for installing usually are with package.

If established colonies are purchased, they should be in modern hives, acquired from a reliable beekeeper, and accompanied by a certificate of inspection to insure freedom from disease.

The best time to begin beekeeping with either packaged bees or in the colonies is in the spring, when fruit trees are in bloom.

A beginner's outfit may consist of the following items, athough it is suggested that catalogs from some of the bee supply houses be consulted for comparable information:

One 10-frame hive, consisting of:
- 1 bottom board.
- 2 10-frame hive bodies complete with frames and thin super foundation.
- 1 outer and 1 inner cover.
- 1 3-pound package of bees with queen.
- 1 smoker.
- 1 bee veil.
- 1 hive tool.
- 10 to 15 pounds of granulated sugar.
- 4 ounces of No. 28-gauge wire.
- 1 spur imbedder.

Such outfits, including a subscription to a bee journal, cost approximately $25. The equipment can be varied, and more can be added after a person has become experienced and learns how to manage large colonies. The standard 10-frame hive is the type generally used in the United States.

The Italian bee is the kind recommended for the beginner in this country. It is hardy, industrious, and fairly gentle, and can be readily obtained in pure stock since it is the bee most commonly kept in the United States.

Cardinal points to observe . . .

1. Bees need an abundant store of honey (25 or more pounds during the active season and 50 to 60 pounds during winter), pollen, plenty of room for brood rearing, a source of water, protection from wind, and exposure to sunlight.

2. Swarming results in the loss of honey, and therefore should be controlled.

3. There should be empty comb space in the hives at all times preceding and during honey flow.

4. For successful wintering, a colony should have a young queen of high producing stock, a large cluster of young, fall-raised bees, 60 or more pounds of sealed honey, and several combs containing large areas of pollen. For these requirements a colony must have a two-story standard hive with a gross weight, in October, of about 130 pounds.

5. It is unprofitable and, in many states, illegal to keep bees in box hives or "gums."

6. It does not pay to cultivate any plant for bees alone. Nectar resources may be improved, however, by planting such crops as sweet clover on waste lands.

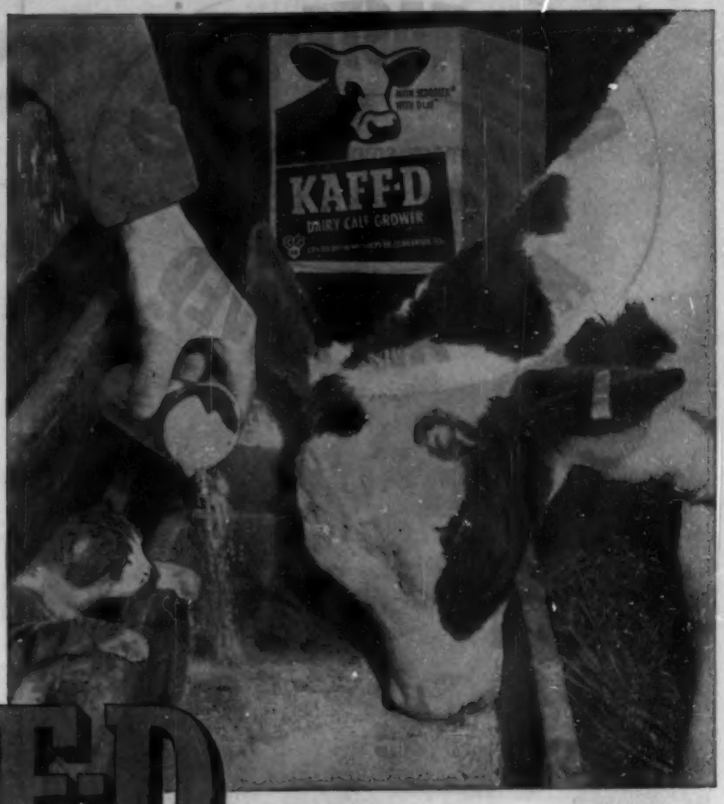
7. Starvation is one of the principal causes of unprofitable beekeeping. If bees are short of honey stores, a syrup of two parts of clean granulated sugar to one of water should be fed.

8. Diseases of bees cause large annual losses of bees, honey, and equipment. Beekeepers should learn to recognize the symptoms, particularly of American foulbrood.

THE END

NOW! SLASH GROWING COST TO 5⅓¢ (out-of-pocket expense) PER DAY ON NEW KAFF-D

You cut nursing cost to 12¢ per day with famous KAFF-A*



You cut nursing costs to half the cost of whole milk by starting calves on Kaff-A! It's the safe replacement for cow's milk that costs less than 12¢ per day for the first 6 weeks!

NOW—at an average out-of-pocket expense of only 5⅓¢ per day you can grow your calves into husky, healthy heifers on the same exclusive milk nutrients (Hidrolex* and DLW*) that are in Kaff-A! New Kaff-D will supply these fine milk nutrients for fast growth from the 7th week on! Kaff-D speeds growth without slowdowns. It stimulates rumen activity and develops big-barrelled, strong-framed heifers to add to your herd.

* Kaff-D supplies exclusive milk nutrients at low cost—flakes of Hidrolex pre-digested milk sugars and proteins; DLW whey fermentation vitamins, proteins, and minerals; plus oat and soya flour, animal fat, and vitamins A and D. One 50 lb. box or a 50 lb. bag of Kaff-D pellets fed with your own farm grains and hay, is all you need feed to grow a big 400-500 lb. heifer in 7 months!

Flash! KAFF-D PELLETS are now available in 50-lb. bags

C P CO

*T.M's for milk by-products manufactured exclusively by Consolidated Products Co., Danville, Ill.

New KAFF-A and -D program supplies milk nutrients for less than $14 per calf!

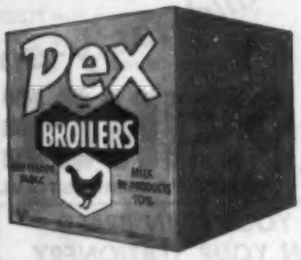
Just 25 lbs. of Kaff-A, the safe replacement for cow's milk, takes care of the entire nursing needs of an average calf (after colostrum). A 50 lb. box of Kaff-D will grow your calves out with the same high quality milk nutrition—the cost of both is less than $14.00.

Get a pail or box of Kaff-A for your newborn calves—and order a supply of Kaff-D for your older calves at the same time. Ask your milk hauler, feed dealer, or hatcheryman today!

A Pex PRODUCT FOR EVERY POULTRY PROGRAM!

KEEPS 'EM LAYING! PEX for layers contains HIDROLEX to supply energy, boost feed intake, DLW* to keep layers in tip-top condition.

FOR STARTING CHICKS—PEX is available in handy 10 and 25 lb. blocks to get chicks off to a fast start and help them grow. Put block down with chicks.



CUSTOM DESIGNED FOR broilers with HIDROLEX, DLW, Whey, fish meal. PEX for Broilers makes fast economical gains, protect against stresses.

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P.A. IS TASTE-TESTED AND APPROVED

by more smokers than any other smoking tobacco

Brothers Agree on P.A. for Pipe and Makin's!

"Prince Albert's my pipe tobacco", says farmer, John Paul. "It has the natural tobacco taste I like!" His brother, Grady Paul, auto-body builder, adds: "P. A. is the makin's of a perfect smoke! Rolls easy and gives a man honest-to-goodness tobacco taste. I smoke P. A. and I know!"

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Naturally best for pipe and makin's! P. A. is *tobacco as Nature meant tobacco to be!* Prince Albert's exclusive process *holds* and *heightens* the rich, natural flavor. No wonder pipe and makin's men choose Prince Albert!

Mild-Tasty-so cool smoking!

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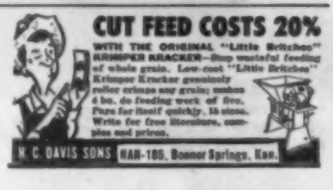

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WITH THE ORIGINAL "Little Britches" KRIMPER KRACKER—Stop wasteful feeding of whole grain. Low-cost "Little Britches" Krimper Kracker genuinely rolls crimps any grain; makes 4 lbs. do feeding work of five. Pays for itself quickly. It's sure. Write for free literature, complete and prices.

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FEEDING

by N. N. Allen

Are our methods obsolete?

. . . or are new findings being over-glamorized? How can a dairyman evaluate research results?

LETTERS from farmers regarding their feeding problems indicate that many of them are confused by reports they read of research results. It is not surprising when they read of new "miracle drugs" bringing certain types of disease-producing bacteria under control and immeasurable forces being unlocked from the atom.

It is the sensational or exciting that arouses interest. The man must bite the dog before it is news. Consequently, it is this type of information that is likely to find its way into the daily newspaper or the farm magazine.

It is much more likely to be read if it is brief, so it is boiled down. This takes out most of the explanatory or qualifying statements. Then, a little crystal gazing brings some guesses as to what it might eventually lead to, pretty wild ones, sometimes, giving it a slant that was never intended by the person doing the work.

As fast as better ways of feeding are established, it is desirable that they get to farmers who can use them, but we don't want to give the impression that the good, sound feeding principles which have been making money for dairymen for many years have become obsolete. New developments may add to their effectiveness, without replacing them.

Rumen bacteria example . . .

For a good example, let's take a look at the bacteria of the rumen, or first stomach of the cow. There has been a great deal of research aimed at finding out more about their part in feeding the cow. It makes a fantastic story, how these tiny creatures take apart the feeds which are fed, building them into new feeds, making nutrients such as vitamins or amino acids, which were not in the feed, but which are important to nourishment.

In effect, we have a small, but very productive farm with the bacteria as the crops growing on the feed which contributes the soil. The tiny protozoa are the livestock on this farm which use part of the crop to produce still different foods. It doesn't take a great deal of imagination to produce a headline which gets attention by proclaiming that we should feed the "bugs", and forget the cow.

And it is not surprising that a man who has been feeding cows should wonder just how he should go about feeding the bacteria. He is pretty sure he knows how to feed cows, but bacteria are another matter. What has this concept done to our everyday feeding?

New feeding practices . . .

Out of the research have come some new feeding practices. For example, many tons of urea, a high-nitrogen fertilizer, are now being fed to cows. This nitrogen is used by the bacteria just as a corn crop would use it to build protein which the cow can digest. Thus we have seen a new feeding practice become commonplace in a period of 20 years or less as a result or research.

Research has also shown how a poor roughage can be used to good advantage. This poor roughage alone is an infertile soil for the bacteria, but by providing the nitrogen and mineral elements it lacks, we can provide the bacteria a soil of balanced fertility, permitting them to make good use of those nutrients it does provide.

Actually, this involves no more than balancing the cow's ration by adding to the roughage the nutrients the cow needs and which it lacks. The bacteria are merely the middle-men in the deal.

Detailed fundamental research has shown the fallacy of grinding hay for cows. It has shown that by so doing, we simply create a "soil erosion" problem, the fine roughage being washed away before the bacteria can use its nutrients.

We are getting closer every day to licking the bloat problem as a result of detailed study of rumen digestion. It also looks like part of the answer on ketosis prevention may lie in the rumen and its bacteria. There's little doubt that there is a lot of pay-dirt in the research or rumen digestion, but no reason to expect it will outmode the good feeding principles that have been paying off for many years.

Our new developments don't replace the basic principles of good feeding. They simply show us more economical ways to achieve this (as in the case of urea feeding) or ways to carry the results just a little farther.

We saw a good example a few years ago when research showed how a hormone in the feed could stimulate well-fed cows to higher production. But, when the idea was taken out to the average dairy farm, it failed to pay off. Why? Because the basic feeding was not good enough. The average cow was then, and still is underfed. She can not capitalize on the stimulation until she is fed up to her ability to produce.

Old principles still good . . .

So, do not feel that your county agent or dairy specialist is old-fashioned or out of date when he talks the time-proven sound feeding practices. As fast as new developments are tried and proven dependable he will add them, and bit-by-bit, our feeding program will improve.

It is not old-fashioned to follow the practices that have always paid off. We are not ignoring the "bugs", either. You will all recall how a prominent government official a few years ago drew a lot of political fire when meanings that he probably never intended were read into a statement he made.

I am sure my statement will not be misinterpreted when I say "What is good for the cow is good for the rumen bacteria", or we could turn the statement around and it would be equally true.

For fast, effective 2-step mastitis control:

1.

2.

Check your strip cup at every milking...
If it says MASTITIS
follow up immediately with

TARGOT®

MASTITIS OINTMENT LEDERLE

Here is a simple effective program that will make money for you—by preventing losses from discarded milk, damaged quarters or good cows sold out of the herd.

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(2) At the first sign of bloody, lumpy or stringy milk, infuse the infected quarter with TARGOT.

Mastitis may be caused by many types of bacteria so TARGOT combines four powerful antibiotics—AUREOMYCIN® Chlortetracycline, Penicillin, Neomycin and Dihydrostreptomycin—for a smashing "4-barrelled" attack against mastitis-causing bacteria.

TARGOT reaches affected tissue, gives fast, strong action and is not milked out and wasted. Available from your veterinarian, druggist or feed dealer.

STRONGER but gentle TARGOT combines 4 powerful antibiotics. Available only in Lederle products.

Always ask for TARGOT by name!

Lederle LABORATORIES DIVISION | *AMERICAN CYANAMID COMPANY* | PEARL RIVER, NEW YORK

Plant more trees around your farm home

(Continued from page 579)

area. They should be placed close to, but not in the shrubbery border. For maximum display of their ornamental values, there should be an expanse of lawn between them and the patio or picture window.

Trees with some ornamental characteristics are also used in the border planting. They should be selected to give you height, accent, and seasonal interest in your border.

Many different types of trees can be used. The cannaert red cedar and the columnar red maple make good accents. Flowering crabapples produce both flowers and fruit and the Russian olive has gray foliage which gives some contrast to the normal green foliage of most trees and shrubs.

Another use for trees that may merit consideration on your farm is screen. There may be objectionable views in the distance that you want to hide or maybe there are parts of your farmstead that should be screened from the road and patio.

When selecting a tree for screening, be sure you don't get any that attract a lot of attention. If you do, people will have their eyes directed to the area you want screened. Where permanent screening is desired, use evergreens, but don't put them in a straight line because then they would not tie in with the other plantings.

Choose permanent trees . . .

After you have decided what types of trees you should have for comfort and ornamental effect, you are ready to select the varieties best suited for your needs. Some suggestions for types of trees that are adapted for various uses are given in the following tables. The trees listed are generally hardy throughout the northeast section of the country. If you are not sure a certain tree is hardy in your area, contact the landscape extension specialist at your state agricultural college or a reliable local nurseryman. They can give you a list of desirable trees that are hardy in your area.

Regardless of what trees you select, make sure they are permanent. Exceptionally fast-growing trees are generally brittle and only last 20 or 30 years. On the other hand, slower-growing types will last as long as the house.

Tall trees*, Spreading-crown

1. Hackberry (M) *.
2. Thornless honeylocust (F).
   Made into spreading form by continually removing lower branches. Desirable for use where dense shade is not desired.
3. American elm (F).
   Not recommended for areas where either Dutch elm disease or elm phloem necrosis are present.

Rounded-crown

1. Red oak (M).
2. Green ash (F).
   Good for a one-story house because it doesn't get much taller than 50 feet.
3. Sugar maple (S).
4. American linden (Basswood) (F).
   Large leaves make dense shade.
5. Sycamore (American planetree).
   Has whitish bark in the upper portion of the tree.
6. Thornless honeylocust (F).
   Retains round shape if branches are not pruned more than 5 or 6 feet from ground.
7. Norway maple (S).
   Good for low home.

Pointed-crown

1. Pin oak (F).
   Brilliant red fall color.
2. Norway spruce (F).
   Evergreen.
3. Douglas fir (F).
   Evergreen.
4. Cucumber tree (magnolia acuminata) (F).
   Not commonly used, but good where hardy.

Horizontal branches

1. White pine (F).
   Evergreen.
2. Thornless honeylocust (F).

Small trees*,

1. Flowering dogwood (S).
   Large, white flowers and red fall foliage color.
2. Sassafras (F).
   Branches arranged in horizontal tiers. Red fall foliage. Good where hardy.
3. Redbud (S).
   Pink flowers early spring.
4. Flowering crabapples (F).
   Many different varieties with different flower and fruit effects.
5. American yellowwood (M).
   Not used extensively but is a very desirable shade and framing tree for one-story home.
6. Amur corktree (F).
   Not used extensively but is a very desirable shade and framing tree for one-story home.
7. Washington hawthorn (M).
   White flowers and red berries in the fall.

Trees to avoid

1. Chinese elm.
   Brittle; no definite shape.
2. Soft (Silver maple).
   Develops a heart rot.
3. Fruit trees.
   Put them in orchard where they can be sprayed.
4. Box elder.
   Bugs; weedy looking.
5. White poplar.
6. Lombardy poplar.
   Short lived.

---

*, around 75 feet at maturity.
*, growth rate.
S—slow.
M—moderate.
F—fast.
*, 50 feet or less.

Summer is the best time to take soil samples for testing, and you'll get better service because the soil laboratories are less crowded now than at any other time of year.

A Van Vetter Exclusive...

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Milk associations all over the country caution producers to investigate service facilities before buying bulk tanks. With a Van Vetter you're sure of Frigidaire service, sure of Land O'Lakes unqualified endorsement, sure of a sensible price! And check these other Van Vetter features—

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Easy Payment Plans. Available through your local creamery on this equipment.

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Immediate delivery on most sizes.

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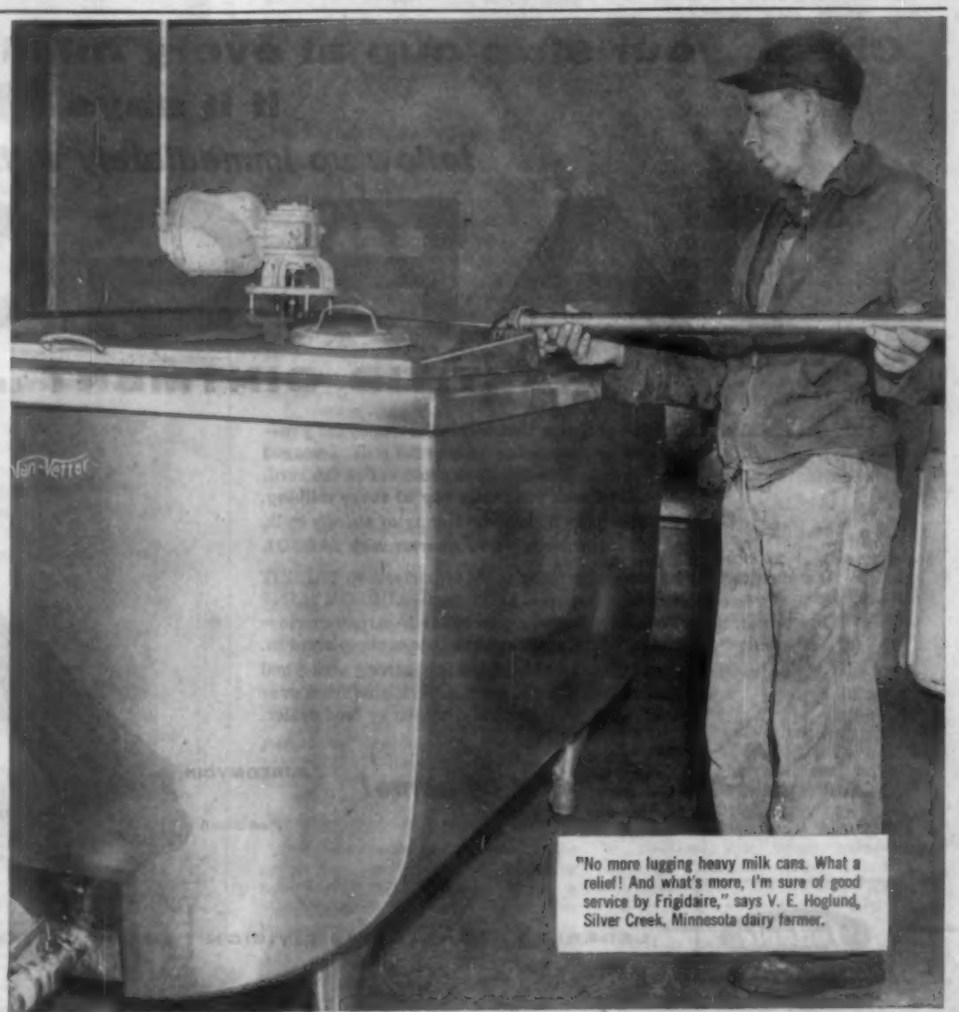

"No more lugging heavy milk cans. What a relief! And what's more, I'm sure of good service by Frigidaire," says V. E. Hoglund, Silver Creek, Minnesota dairy farmer.

CORN STALK is tested for nitrogen, phosphorous, and potassium. The stalk is split down the center and the tissue test is made to determine if enough plant food is present to meet plant's needs.

Ask the plant

You can test plant tissue to determine if the symptoms you noticed in your field mean a deficiency of nitrogen, phosphate, or potash.

by A. J. Ohlrogge

TESTING a plant's conducting tissue for the amount of nutrients it contains is a sure method of finding out what the crop lacks.

If the conducting tissue tests low in nitrogen and high in phosphate and potash, nitrogen is the first limiting factor causing firing in the corn field. When one nutrient is in short supply, the other plant foods accumulate in the tissue but are useless because of the shortage of one of the plant foods.

Several tests for use on growing crops are available. A small kit developed by Dr. R. Bray of the agronomy department at the University of Illinois is low in cost and handy to use.

With a pliers, juice from a test plant is squeezed onto a paper test strip. Then a test powder is applied for nitrogen determination, and a liquid is used to test potash and phosphate. The intensity of color that develops is a measure of the concentration of plant food in the plant sap.

Another test kit developed at Purdue University combines both the soil and plant tissue tests in one kit. Here plant tissue is cut up and mixed with extracting solutions which are then tested for phosphate and potash by adding appropriate reagents. The intensity of the blue color for phosphate and the density of the yellow precipitate for potash tells whether these nutrients are in adequate supply. Nitrogen is determined by the color of the test solution when dropped on the cut tissue.

A test result is no better than the sample tested, plus the knowledge of the man who is interpreting the results. When testing remember to:

1. Keep reagents and equipment scrupulously clean.
2. Follow directions closely.
3. Get a good sample, at least 10 plants for each field situation.
4. Always test for all three nutrients, nitrogen, phosphate, and potash.
5. Make tests more than once during the growing season; plant needs and soil supply of the available nutrients change as the crop matures.
6. Make comparative tests of apparently well-nourished plants and deficient plants. Even in the most deficient fields there usually are a few vigorous plants. These comparisons will improve judgment.
7. Test different parts of the plant to help in understanding how a plant functions and what variations can be expected.

What kind of results can be expected? On a farm in Vigo County, Indiana, the corn was pale green, and Mr. Greenly could not determine the cause. A complete fertilizer had been used in the row. Tests of the tissues showed a high level of phosphate and potash. No nitrogen could be found in the stalk, which was convincing evidence of the inadequacy of the 8 to 10 pounds per acre of nitrogen put in the corn row.

On the Clem Geiser farm in Calumet County, Wisconsin, the silage corn and beans were turning yellow between the veins. It looked like potash hunger, but the symptoms were not entirely characteristic. Soil tests showed a medium level of phosphate and potash, and tests on the corn were very high for nitrogen, phosphate, and potash. This was clinching information that some other factor was causing the discoloration, and applications of magnesium sulphate solved the problem.

Any number of cases can be cited where careful sampling plus thoughtful interpretation gave valuable answers.

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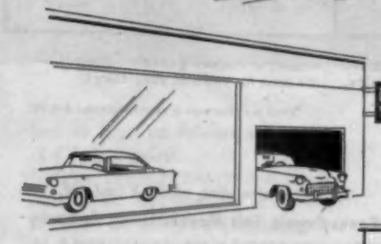
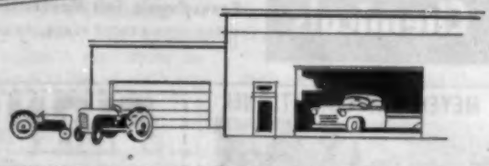


GM CAR DEALER...



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CLEAN with Penncleano. Where milkstone is difficult to remove, try Penncleon acid cleaner. Its controlled action removes all milkstone, yet does not harm metals. Reduces clean-up time, eliminates hand scrubbing and long rinsing.

CLEAN with BryKo*! To prevent "hard-water film" on dairy utensils, use BryKo liquid cleaner. Safe, powerful BryKo works fast on utensils, bulk tanks—on glass, paint, and plastics, too—in both soft and hard water!

The complete line of B-K dairy sanitizers and cleaners is sold by your dairy, dealer, or receiving station. If it's B-K—it's best for you and your dairy!

*BRYKO IS A TRADEMARK OF PENNSYLVANIA SALT MFG. CO.

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Now, you can afford a MEYER HAY CONDITIONER. Cuts curing time in half . . . stems dry fast as leaves . . . remain soft and pliable . . . hay retains color, protein and up to 300% more carotene (Vitamin A). Hay can be put up same day. Danger of sun-burning and rain spoilage reduced. New LOW PRICED MODELS can be used with your present mower. New Detachable Mower Model—excells all others.

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GROUND ROD, 8 feet long, is being driven in next to fence post.

TOP of rod can be buried, or 3 or 4 inches can be left exposed.

Prevent a death... ground your fences

If lightning strikes or jumps to a fence, the charge may be conducted for long distances, if fence is not properly grounded.

by F. W. Andrew and R. W. Kleis

CONTRARY to the old adage, lightning can strike twice in the same place! As a matter of fact it is quite likely to, unless conditions are changed to make them less favorable for lightning attraction.

It is an accepted fact that certain localities are more susceptible to lightning damage than others. If lightning strikes are common in your area, you might well consider grounding your wire fences regardless of type.

When Abraham Lincoln split fence rails he was using a material which was essentially an insulator and involved no lightning or electrical problems. Modern wire fences are good conductors of electricity and, with long sections, an electrical condenser is established. This is especially true of woven wire fences mounted on wood or concrete posts. The fence becomes a giant storage battery for static electricity during a thunder storm.

Because the fence is an electrical conductor and higher than its surroundings, it is most susceptible to lightning strikes.

There is less possibility of material damage or loss with a fence than with buildings, but the susceptibility to lightning is similar. When lightning strikes or jumps to a fence, however, the charge may be conducted for long distances if it is not properly grounded. This results in sizable losses of livestock each year. Occasionally a human life is lost.

When lightning strikes a wire fence it tries to neutralize itself with the earth any place it can. Often the path of least resistance between the fence and the ground is through nearby livestock with four feet planted on the ground and moistened by the concurrent shower. A good metallic grounding system can change this situation.

Theoretically, a wire fence mounted on steel posts would automatically be grounded. If the connections were always tight and remained rustfree, and if the ground at post depth were always moist, it would be well-grounded. Shortly after construction, however, corrosion makes the contacts between the fence and the posts poor conductors of electricity.

It should be recognized also that

The authors are agricultural engineers at the University of Illinois.

BOLT CONNECTORS hold copper wire at several points of fence.

GROUND WIRE is clamped to the top of rod with a bolt connector.

our most severe electric storms occur during the summer months when the ground is relatively dry at post depths. A fence with steel posts is more likely to be grounded than one with wood or concrete posts but even it is not dependable.

Carries off voltage . . .

The principle of lightning protection for a wire fence is similar to lightning protection for buildings. Ground rods are driven to permanent moisture and connected to conductors with high points to carry off the voltage potential before it builds up into a destructive charge or bolt of lightning. The rods themselves are also bonded to all metal parts of the buildings such as hay tracks and door tracks.

The wire fence also needs to be connected to the permanent moisture in the earth in such a way that the voltage can be neutralized before a lightning charge can build up. This means that all connections must be clean, bright, and tight. Regular electrical connectors, ground rods, and clamps are the most satisfactory.

The ground rod should be at least 8 feet long and ⅝-inch in diameter. A regular ⅝-inch copper-weld ground rod is good but rather expensive. A ¾-inch galvanized iron pipe section is satisfactory and less expensive. The top may be either buried below the surface of the ground or allowed to stick up 3 or 4 inches for ease of making connections. In either case, it is recommended that the rod be driven next to a post so that it will not be hit by tractor tires, implements, or livestock.

The copper ground wire should be at least No. 6 and should be clamped tightly to the top of the rod with a clamp made for this purpose. The wire should then extend vertically up the fence and be securely fastened to the fence at several points with split-bolt connectors. With a barbed wire fence, the ground wire should be connected to each wire. With a woven wire fence, it is recommended that the ground wire be connected to the top, middle, and bottom wires. It should also be connected to any barbed wire strands over a woven wire fence.

The many barbs make good discharge points to prevent a lightning charge from building up. Sharp turns in the ground wire are to be avoided. The clamps and split bolt connectors are available at most electrical supply stores.

This grounding procedure should be repeated for each 10 rods of fence. If there is a low spot in the terrain, it is desirable to locate a ground there to take advantage of greater soil moisture.

Electric fences can also be protected. They can **not** be grounded **directly** without destroying their electrical operation. They **can**, however, be grounded through inexpensive **lightning arrester** units which are placed in series with the ground wire. They are available from electric fence dealers.

If you live in an area where lightning storms are common, you might well take steps for protection of your livestock and family by grounding your fences. Grounding also provides protection against physical injury from power lines shorting to or falling on fences.

Policeman — "Did you see the number of the car that knocked you down, madam?"

Woman—"No. But the woman in it wore a black turban trimmed with red and her coat was imitation fur."

"A bulk tank is the only way to handle milk,"

SAYS OTTO OTTENSON
COTTAGE GROVE,
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Mr. Ottenson says, "My Stainless Steel bulk milk tank saves me a solid hour of labor every day. I have cleaner, better quality milk, and there's more of it. The Methylene Blue Test is up from 6 hours to an average of 8 or 9 hours. Butter fat is up 2 points to 3.8, and I've had as high as 4.0—at a premium of 6.7¢ per point.

"I'm getting 25¢ premium for bulk milk, and hauling costs were dropped 5¢ per cwt. Including the butterfat premium, I'm getting about two dollars a day more income from the 600 lbs. of milk my Holsteins produce daily. At that rate, my tank will *pay for itself* in about three years.

"Any way you look at it—on the basis of labor, income or milk quality—the tank is paying off."

Learn more about Stainless Steel bulk milk tanks. Send the coupon.

See The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

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EDITORIAL COMMENT

THE INTELLIGENT MAN

WEBSTER defines "intelligence" as "the capacity for knowledge and understanding, especially as applied to the handling of novel situations; the power of meeting a novel situation successfully by adjusting one's behavior to the total situation; the ability to apprehend the interrelationships of presented facts in such a way as to guide action towards a desired goal."

You will note that Webster emphasizes "novel situations." Here we enter onto delicate ground. Intelligence, therefore, is how we respond to something new.

Each of us, undoubtedly, meets a new idea with skepticism and even a certain degree of fear. We hesitate to tax our mental capacity with the responsibility of evaluation and judgment. We are inclined to let someone else perform that difficult chore.

The result of all this is that we do not exercise our reasoning power. We become group thinkers. If the Republican party says such-and-such is true, then it is so. If the Democratic party says such-and-such is true, then it is so if we are Democrats. Similarly, if we are strong Farm Bureau people, Grangers, or Farmers Union people, we may be inclined to let others do our thinking for us. This, to us, is a dangerous tendency.

It is no crime to hold views which are divergent with the organization to which you belong. There is no disloyalty simply because your intelligent reasoning leads you to different conclusions. In truth, your very attitude and the influence of your reasoning can do naught but make your organization stronger.

In our great country, the very success of our way of life is dependent upon the intelligence of the individual. The blind following of chosen or unchosen leadership is entirely foreign to our character.

We have deep faith in the latent intelligence of the American citizen. We must be careful, however, that each of us exercises and applies that intelligence. The very future of democracy depends upon that exercise and application.

PROCESSOR INDIFFERENCE REWARDED

THERE is a certain amount of justice being done in the turmoil affecting many of our fluid milk markets. When dairy farmers were trying to develop a better peacetime dairy program, processor groups were singularly indifferent to the apparent need.

The general processor sentiment has been to ride along with the guaranteed government market for manufactured products. Certainly the tremendous volume of milk has been welcome to them in their processing or manufacturing operations.

We have repeatedly urged the processor organizations to take a genuine interest in the economic well-being of the dairy farmer. Our appeals, and the appeals of others, have apparently fallen on deaf ears. To be sure, certain processors have been concerned and have searched for better marketing techniques and an improved dairy program. They have been in the minority, however.

Now industrial strife has hit the dairy industry. The headaches of strikes, property damage, dislocated markets, changing prices, and deteriorating patron relations are the lot of the processor. He looked the other way when there was a need for his understanding, cooperation, and support. His indifference has brought its reward.

If the processor wants a continuation of the same turmoil deep on into the future, he need only to continue his past policies. There is the making of many an ulcer in the pattern which has been established.

HEALTH INSURANCE FOR OUR HERDS

EVERY livestock owner knows livestock must be healthy to be profitable. In the United States, the health of our livestock industry has been entrusted to the leadership of the U. S. Department of Agriculture.

For many years, U.S.D.A. had diagnostic centers in Washington, D. C.; Denver, Colo.; and Auburn, Ala. Recently, however, because of the health hazard to personnel employed in these structures, the diagnostic facilities had to be closed down. This left the livestock industry without facilities for carrying on confirmatory diagnosis of animal diseases. It has brought to a halt the production of tuberculin employed in the application of the tuberculin test to cattle, swine, and poultry. It has stopped the production of Johnin, which we employ to detect Johne's disease. It has also caused the department to discontinue research on several important animal diseases which formerly were carried on at the three stations.

Recently, President Eisenhower sent to Congress a request for an appropriation of $19 million for the construction of an animal disease laboratory at Beltsville, Md. In our opinion, Congress should grant the request.

LET'S BREED AN EFFICIENT COW

WE WISH some breeder or experiment station would tell us if it is possible to breed a "roughage" cow.

A few years ago we watched a world's champion producer complete her record. Her owner called her his "old hay burner." It seemed that for most of the day she stood with her head buried up to her ears in the hay manger. She didn't eat a lot of grain.

Is it possible that this characteristic is inherited? Can some cows stay in good flesh and produce a respectable quantity of milk on plenty of good roughage and comparatively limited grain?

It would appear to us that records must be available somewhere to reveal whether this is a practical breeding objective.

PATRIOTISM

Americans are not especially noted for being reticent, but most seem reluctant to talk about their feelings for their country. They leave such sentiments to orators and editorial writers. Deep down inside, they do have feelings of intense pride and affection for their country. Silence breeds apathy—and the greatest danger that confronts our nation today is the apathy of its citizens. It is time for each of us to speak out about the basic things our country stands for — such things as self-respect, self-reliance, and individual responsibility. A very great American once said that 'to sin by silence when they should speak out makes cowards of men."

—J. Ollie Edmunds

FARM LEADERS TO MEET

A FEW issues ago we stirred up a hornet's nest with an editorial criticizing our national farm organizations for their failure to sit down together in a sincere effort to reconcile some of their differences. From many quarters we were roundly condemned for daring to infer that national farm leaders had any right to discuss matters of policy with other groups. Some of our readers believed that farm organization leadership was tied hand-and-foot by the resolutions passed at annual meetings. This is not the case.

Each farm organization passes many resolutions in annual convention. Primarily, these resolutions are broad statements of policy. Certainly officers have no legal or moral right to act contrary to those established policies. Within those policies, however, there is often a wide range of actions which can be taken and yet which are consistent with the policies established by the membership.

It was with great pleasure we learned recently that a series of meetings is now planned to bring farm organizational efforts into harmony wherever possible. The first in this series will be held in early June. It will involve officials of The National Grange, the Farm Bureau, the National Farmers Union, and the National Council of Farmer Cooperatives. Farmers everywhere should be heartened with this news. As Herschel Newsom, master of the Grange, stated: "If the farm minority is going to cope with the power of other groups, it must present a united front wherever possible."

No farm organization need fear that it is going to lose its place in the sun. Farm people are not interested in having their national leaders conduct a popularity contest for their farm groups. The members are interested in one thing, and that is results.

We are certain that all people feel their own particular farm group gains stature through the democratic process of conciliation, through the understanding of the points of views of others. Further, they endorse a conscientious effort to maximize areas of agreement rather than parade our farm group disagreements before the public.

As dairymen, we might like to see our dairy organizations included in these series of meetings. Realistically, however, if we open these sessions to commodity organizations, the group would soon become so large and so burdensome that progress would be, indeed, difficult.

On the other hand, we do insist that matters of commodity policy should not be resolved by the four national farm groups until such time as they have fully explored the commodity problems with those organizations directly involved. This, we happen to know, is also being considered.

At this hour, the picture on the national scene looks better. While we cannot expect overnight changes, there is a reasonable prospect that the next session of Congress may be far better guided on matters of farm legislation than was this Congress.

In 1914, W. D. Hoard said:

The superior cowman is one who makes a close study of each individual cow in his herd and shows his ability by adapting himself and his treatment to the individual needs of each cow.

Do we know our own dairy industry?

As we make policy decisions for the future of dairying, we must be certain that we don't throw stumbling blocks in our own path.

by Charles E. French

DAIRY policy is floundering. It has no direction." These serious claims are being leveled in several quarters today. Such claims are followed by a pointed question: "Do we really have any guideposts for a peacetime dairy policy?"

In my opinion, we do. There are several characteristics of dairying that are different than those found in other commodities. Unless we relate our decisions to these characteristics, we can make serious errors in judgment. If we do keep these in mind, our decisions should stand the test of time.

Let's look at the peculiarities of this dairy business; first, in general; then, on the farm; and, finally, in marketing.

1. **Milk is extremely bulky and spoils easily.** Such a combination is, in many ways, unique. Our decisions must recognize the full impact of the economics of transportation and storage. Technological advance in transportation and storage is rapid. Good policy must allow for revolutionary changes in these two marketing functions.

2. **Milk creates unusual health interest.** It not only spoils easily, but it is an excellent media for bacteria and pathogenic organisms. Health must be protected. Yet policy must recognize that this is basically a healthy nation. People are not awed that an industry promises to protect health; they expect it.

3. **The enforcement of local health and sanitary codes has been endorsed by the dairy industry.** The local aspect of such enforcement is unique. Public policy must respect local interests, yet it must emphasize and foster similarities, not differences, in health regulations.

4. **The dairy industry is "quality-minded" above minimum health standards.** There is a prevalent feeling that anything which can be done in the name of quality is "good for the industry." Public officials and industry representatives must recognize at least two aspects of the quality problem.

First, health must be protected and any reasonable cost must be paid to maintain a level of quality which will assure this health.

Second, after we push quality standards above this minimum level, the problem is basically one of costs and returns.

5. **Milk has special nutritional aspects.** It is a large part of the diet. It claims to be the first food and emphasizes its importance to the young.

Yet, dairy policy must recognize that the consumer today has little resentment of substitutes. Despite the kingly position of milk products as foods, the industry must go into the market place and actively compete for the food dollar.

6. **There is an extreme amount of governmental activity in dairying for an agricultural industry.** It is an industry that accepts administration of prices, regulation of product character, and promotion by public agencies. Policy decisions must recognize the evils of inapt or possibly bungling government control. They must also recognize that evils of private control can be greater.

7. **There is a wide variation in the size of plants and farms.** Plants tend towards large size more than do farms. In the economy of today and tomorrow, small numbers of large units must be recognized as the rule, not the exception.

8. **In number of farms and firms dairying is a declining industry.** Technological improvements will probably continue to increase production efficiency faster than demand for dairy products will increase. Thus, dairying will continue to need still fewer people.

Dairy policy must recognize that **standard of living per person** is the important thing, not dollars of gross return to an industry, percentage of the consumer's dollar, or even unit selling price.

On the farm . . .

1. **Much dairying is done as a sideline enterprise.** If dairy cows are used to eat roughage grown to maintain fertility necessary for growing high-value crops, it is next to impossible to allocate costs among the enterprises on the farm. If the sideline dairy farmer does not know his costs for milk, policy cannot expect him to react to price changes as if he were a specialized farmer.

2. **Dairying uses a large amount of labor.** As changes occur in the bargaining power of labor, there is an acute effect on dairying. Also, as dairy production is used more and more for fluid consumption, there will be a tendency for dairy farmers to feel more direct competition from industrial labor. We must encourage high labor output if the industry is to have the competitive wages necessary to hire the type and number of people needed.

3. **Consumption and production areas are generally close together**—probably more so than would ordinarily be dictated by economic laws alone.

Changing technology has probably made this more of an economic problem than formerly. Policy must allow for interregional shifts, but it must also recognize that such shifts will come gradually.

4. **Dairying has a highly seasonal production** relative to its perishability and consumption pattern. Sound policy must encourage by economic incentive a smoothing of this production pattern. However, it must recognize that cost considerations probably do not dictate a perfectly level production goal.

5. **The industry has unusual long-run production stability.** Biologically, a cow dictates this. Capital investments, even with loose housing, dictate it. Also, dairy resources generally have fewer alternative uses than other types of agricultural resources. Dairy policy must consider the long-run goals of dairying. The difference between fixed and variable costs must be a part of the thinking of policy-makers.

6. **Milk is produced and consumed throughout the entire country.** Dairy policy for the long-run advantage of the industry must be for the long-run advantage of the public. The importance of dairying to so many people should give public support for any sound industry policy.

In the markets . . .

1. **There is no physical market or trading area which compares in size with the large central markets** often held as important price making institutions for most agricultural goods. Fluid markets especially have been of an isolated character. The tendency of technology is to reduce the importance of this unique quality.

2. **Milk is a raw material for several products.** Each of these has its own particular supply, demand, and price structure. Special interest groups **within the industry** must reach agreement. Industry problems generally are too small to expect the general public to benevolently resolve them for the industry. If the industry cannot resolve within itself certain of these policy problems, it cannot expect favorable public policy.

3. **Nearly all of the product is processed.** Thus, we have not only the economic complications of the usual production and marketing processes, but we also have the unique set of problems that go with food processing. In our age, the growing tendency toward industrialization of food processing demand that our policies recognize and provide for changes brought through research and innovations.

4. **Milk is generally valued according to use.** This is an accepted means of securing market stability. However, its uniqueness draws looks of askance. Such a plan cannot remain static. It must be changed as conditions change. Restrictive techniques cannot long endure if used primarily to exclude milk of one area from another.

5. **Most milk is based pricewise on an animal fat.** This animal fat is tied up in a web of national and international relationships among food and nonfood fats and oils. Animal fats generally are feeling the impact of a declining demand.

Economic pressure eventually will change ill-advised and out-dated buying methods, formulas, and other marketing mechanics. However, such alterations may be difficult. For example, widespread buying on other than a butterfat basis could have wide repercussions. Even changing the butterfat differential is a serious business.

6. **Milk in its original form tends to be a highly standardized product.** However, by brand advertising and specialized services, attempts have been made to differentiate the product, particularly at the fluid level. Much nonprice competition exists. However, in recent years, we have had substantial price competition.

The present rash of federal orders and unfair trade practice laws suggest the need for an objective study to be sure that selling practices are putting long-run goals ahead of short-run expediency.

7. **Dairymen sell a very large amount of service.**

Too often the demand for the service is confused with the demand for the product. A good policy must supply customers the services they want, but it must guarantee them complete choice as services change.

8. **Farm marketing of milk is highly organized.** For years, dairying has been a cornerstone of the cooperative movement. Successful policy must give farmers the right to organize. Likewise, it must demand that they shoulder the responsibility that goes with such organization.

It is probably too much to hope that even a peacetime policy can observe all of these guideposts. Yet it must try.

It must be positive, yet flexible.

It must be direct and definite, yet cognizant of necessary compromises.

It must serve the dairy industry, yet serve the general public.

It must respect the past, yet not revere it. THE END

The author is associate professor of agricultural economics at Purdue University.

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WHY THIS PRICE FOR MILK?

Article No. 9

California sets prices from farm to doorstep

While it has its problems and room for improvement, California's milk pricing has been quite successful. Surplus milk production is held in line through contracts between dealers and farmers.

by Hugh Cook and Harlow Halvorson

UNLIKE most states which control the price of milk, California has little trouble with out-of-state milk flooding its markets.

Federal law does not permit one state to set minimum prices to farmers in other states. For example, New Jersey cannot force its handlers (dealers) to pay New York farmers the New Jersey minimum prices on milk shipped into New Jersey. This would be an illegal interference with inter-state commerce.

Since federal milk marketing orders are based on the interstate character of milk movement, they are most needed for regulation of prices in the East where market milk supplies commonly move across state lines.

State milk price control in California, despite its shortcomings, is probably among the better administered of the state milk control laws. Its present pattern of control of market milk prices began in 1935 with the passage of the Young Act, which was designed to establish minimum prices to producers. In 1937, with the passage of the Desmond Act, state control was extended to the wholesale and retail levels.

Under this legislation, which has been essentially unchanged since its passage, market milk prices at all levels of distribution have been controlled for nearly 20 years. Under these acts, control of milk pricing is vested in the Director of Agriculture who operates through the California Bureau of Milk Control.

As under federal orders, marketing areas are established for which individual marketing and stabilization plans are developed. In 1955, there were 37 such marketing areas in California. Classified pricing plans are used, but on an individual plant basis rather than on the market-wide basis followed under most federal orders.

Shipments of milk and cream from one marketing area to another require control just as under federal orders. Prices in the various areas must be properly coordinated or wasteful movement of milk develops.

Producer prices for market milk in the surplus classes are set by the Bureau of Milk Control at not less than manufacturing milk prices. In recent years, current quotations on manufacturing milk have been used to establish the prices of the surplus classes.

Use cost of production . . .

Class I prices, based on evidence of adequacy of supplies, cost of production, and other factors, are established by the Bureau and, of course, are higher than the surplus classes. The legal standards required of the Bureau are not very specific for Class I. They merely require that these prices be related to manufacturing milk prices including the added cost of producing market milk. They must be high enough to provide consumers with a safe and wholesome supply of milk at fair and reasonable prices.

The Bureau seems to have set Class I prices in a manner reasonably consistent with the level and movement of Class I prices for the nation as a whole.

Unlike federal order pricing, California's Desmond Act requires that whenever producer prices in an area are controlled the Bureau of Milk Control must establish minimum resale prices for the particular marketing area. Thus, producers must petition for producer price control. Once this is approved, however, wholesale and retail price control is automatically required.

Comparison of farm price changes for market milk in California with other markets in the United States indicates these changes have been roughly comparable. Over the years, California producers have done about as well pricewise as producers in the average of other major markets in the United States.

A more detailed examination of pricing procedures indicates there

This description has drawn heavily upon the Report to the Joint Legislative Committee on Agriculture and Livestock Problems, by D. A. Clarke, Jr. titled "Fluid milk prices control in California," June 1955. For those interested in further study of California milk price control, this outstanding study is especially recommended.

"Let's face it, Charles. He looks like you."

is room for improvement. The requirement that milk be physically commingled to be pooled has worked undesirable and uneconomic hardships on some farmers. This places some farmers at the mercy of plants through the possible diversion of milk.

Farmers more distant from consuming centers do not share equally, and in a manner consistent with their function as reserve suppliers for the consuming centers. The more distant producers tend to bear the burden of the entire surplus of the marketing area, which seems to be unfair and discriminatory treatment.

A system of contracts is in force between distributors and farmers. A contract is required when more than 200 gallons per month is purchased from a producer.

The contracts specify the amount of milk the distributor guarantees to purchase from the producer (farmer) for a specified period, and the amount for which Class I prices are to be paid.

These contracts serve to guide the level of production and protect farmers by guaranteeing top prices on a specified part of the contract.

The use of contracts, and bargaining over their terms, has served to increase discrimination against the less highly organized and less strategically situated producer groups.

Also, terms of contracts are related to seasonality of production, or production during the base-forming months. This helps to level production.

A further brake on milk supplies is provided by the cooperative dairy associations with Grade A pools. Most of these are reported to operate on a semi-closed basis and are opened only intermittently. Shipping rights have been reported as "sold" in some markets.

All of these make it somewhat difficult for new producers to gain a foothold, and therefore may contribute to uneconomic production and handling of milk. Handlers, or, better yet, market-wide pools with more freedom of entry would tend to result in more equal treatment of all farmers.

But, despite the important possibilities for improved milk pricing, examination of the evidence does not indicate distortion of prices (in relation to surplus prices) to nearly the extent found in other areas. In other words, California prices, on the average, do not seem to be significantly out of line. Instead, within the state, important improvements leading to fairer treatment of individual producers are possible.

Control all prices?

There has been a long-standing disagreement among dairy leaders whether resale price controls are necessary to insure minimum farm prices. During the depression, federal milk pricing arrangements assumed that retail price controls were necessary. In just a few years the difficulties became so severe that wholesale and retail price controls were abandoned.

Since before World War II, federal orders have not attempted to control wholesale and retail milk prices. Since then, federal control has been undertaken by O.P.A. and O.P.S. as part of broad programs of price control during wartime, and not as part of a program of guaranteeing minimum prices to farmers.

For nearly 20 years the federal order program has shown that retail and wholesale price controls are not a necessary part of a program to secure minimum prices to producers. In California, however, whenever producer prices in an area were controlled wholesale and retail price controls have been required since 1937.

Margins held down . . .

One of the most common, and probably unfounded, criticisms of state milk controls is that they generally have resulted in wider marketing margins. Available evidence is to the contrary.

On the average, margins seem to be somewhat smaller although less variable. More important, however, the average difference between margins in state controlled and uncontrolled markets is considerably less than the differences among markets in either group.

Local circumstances are probably more important in accounting for differences in margins than whether or not state controls are present.

Even though some common notions about state milk price controls and their effect on margins are not borne out by the evidence, there is usually room for improvement in establishing prices and, consequently, margins. This applies to California as well as elsewhere.

The size of the margins permitted (by the established prices) will affect the success or failure of distributors, just as the level of producer prices will affect the number of producers who can survive.

In California the law requires that these margins are to be set at a level which will cover costs of *reasonably efficient* distributors, and maintain adequate and efficient distribution facilities without requiring consumers to pay more than necessary. Thus, in the California legislation there is some emphasis on efficiency of distribution.

In resale price control the most important problem seems to have been to get the type of law, and administration of law, which permits and even encourages more efficient methods of distribution. The manner in which California margin controls have worked has hindered the development or adoption of more efficient methods of pricing and distribution.

For example, prohibition of lower prices for larger volume purchases has tended to keep milk distribution from being more efficient.

Small-volume consumers have been serviced at the expense of those taking larger volumes.

The existence of secret rebates, special financial arrangements, captive stores and dairies are all evidence that there is room for improvement in pricing arrangements.

The reader should not be left with the impression, however, that California state milk control is rigid, unyielding, and backward.

On the contrary, in states with state milk controls it is probably among the leaders in relying upon research.

Changes have been made and proposed in the Agricultural Code which point toward solution of the problems mentioned above. Volume pricing is in effect in a limited way as well. Accounting for and pricing milk on the basis of fat and skim components will result in more equitable treatment of producers as well as improve distribution efficiency.

All of these things, and others, strongly point to the fact that milk price control should serve the general public interest as well as the interest of milk producers.

This article completes our review of representative federal and state milk marketing orders. The question arises: "Do milk orders need a 'new look'?" The next article will attempt to provide an answer.

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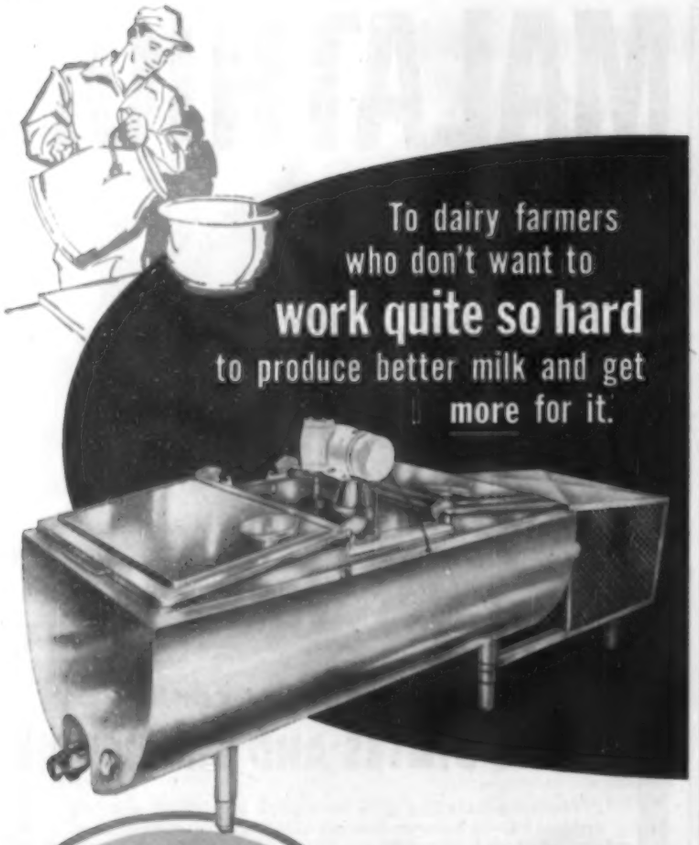

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by L. H. Shebeski and G. Friesen

PRIOR to the large scale acceptance of 2,4-D and allied chemicals, large areas of the United States and Canada were a riot of color in early summer—the golden yellow of wild mustard.

The sprayed acreage increased greatly in the first five years of 2,4-D use (from ½ million to 14 million acres in western Canada alone). Encouraging though this may sound, in no single year has this vast area had even one-third of the cropped acreage sprayed.

The need for spraying a far greater acreage will be self-evident to anyone who makes more than a casual survey of grain fields. Last spring while traveling through the province of Manitoba, the authors made weed counts in fields at random when grain was approximately in the three-leaf stage. Most of the 16 fields examined appeared clean from the highway but on closer examination were found to be quite weedy.

In wheat, on land that had been in fallow the previous year, an average of 285 broad-leaved weeds were found per square yard. Barley on stubble land had counts ranging as high as 700 weeds per square yard.

The question of how many weeds per square yard will cause losses and to what extent in various grain crops, has been carefully studied for the last four years. In addition, the value of destroying mustard in these grain crops has been studied.

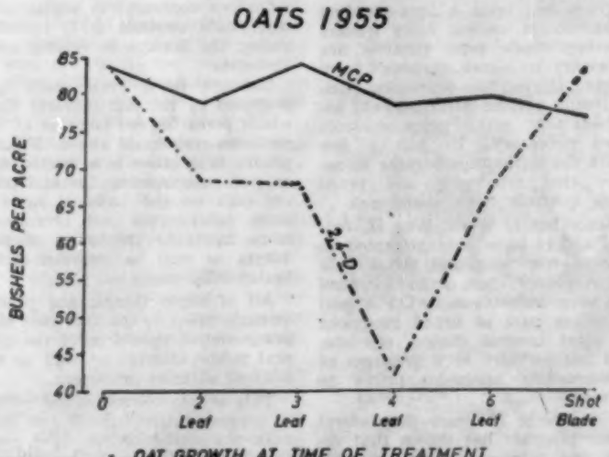
1. Ten mustard plants will reduce flax yields by more than 50 per cent.
2. Twenty-five plants per square yard reduce oat yields.
3. Fifty mustard plants per square yard are required to reduce yields of wheat or barley.

Considering the very low cost of 2,4-D, it obviously pays to spray small grains even with very light infestations of mustard.

Spray mustard early . . .

Although 2,4-D or MCP effectively destroy wild mustard, spraying must be done while the mustard is still young or when the wheat is in its five-to-six leaf stage. A series of experiments were designed to obtain more in-

The authors: L. H. Shebeski is professor of plant science and G. Friesen is weeds research assistant. Manitoba Agricultural College, Canada.



OATS has greater tolerance to MCP at 4-leaf stage than it does to 2,4-D. When properly applied, either chemical does a good job.

formation on when, in the growth of wheat, barley, and oats, does mustard competition begin to reduce yields. These crops were grown free of mustard and in association with 100 and 200 mustard plants per square yard. The mustard was then removed at several stages of crop growth using 2,4-D ester at four ounces per acre.

Effective competition did not take place until after the wheat was in its six-leaf stage in 1954, but the full impact of competition was realized in less than six days. (In 1952 the full competitive effect of mustard was expressed even before wheat reached the five-leaf stage.)

Evidence from four years' experimentation indicates that the time competition may become effective varies from year to year, but when weeds begin to take their toll, they do so very quickly. One obvious conclusion is spray early.

When to spray in oats . . .

The question of time of spraying must take into consideration the sensitivity of the crop. There has been ample evidence to show that oats are sensitive to 2,4-D under some conditions. Therefore, in 1955, the oat experiment was broadened to include five spraying dates and to compare the effect of MCP and 2,4-D on oat yields. Both herbicides were applied at the rate of four ounces (acid equivalent) per acre and ester formulations were used.

Although it is quite safe to spray oats with 2,4-D at the shot-blade stage, weeds have already done their damage by competition. Therefore, the obvious solution is to recommend the use of MCP rather than 2,4-D in oats for easier-to-kill weeds such as mustard. Spraying should be done when the mustard is just coming through the soil and the oats are only three to four inches high.

Spray mustard in legumes . . .

In regard to spraying grain fields underseeded with grasses and legumes and infested with wild mustard, we could make the following general statements:

Since seedling legumes and grasses grow slowly, they are usually poor competitors with weeds. Therefore, if fields are seriously infested with wild mustard, considerable weakening of the grass and legume seedings will occur, due to the weed competition. Seedling stands of Ladino clover, alsike clover, red clover, lespedeza, alfalfa, and grasses can be treated to kill wild mustard with MCP amine at not more than four ounces per acre or MCP sodium salt at six ounces or less per acre. The legumes are most resistant at an early stage of development. Therefore spray mustard when the legumes are at the second true leaf stage. 2,4-D or MCP ester may cause some damage to the legumes even at low rates.

How to care for your sprayer

(Continued from page 581)

nozzle spacings, it will be necessary to plug the nozzle outlets directly over each row. You will also need a two-nozzle adapter to allow you to adjust the nozzles so that all of the area between the rows can be covered.

Corn borers continue to be a menace. It is sometimes advisable to spray to control them. In this case you want to apply the spray material directly to the corn stalk and leaves. You will need to use a nozzle in the boom directly over the row and two nozzles in the boom drop between each row with one nozzle directed to the plants on either side.

Many other uses . . .

The use of sprayers doesn't stop with the above mentioned operations. You can use them for many others. For instance, you could attach a hand gun and hose and spray weeds or insects along a ditch bank or fence row. You could even use a hand gun for spraying inside buildings such as hog houses or dairy barns.

Sprayers can also be used for the application of liquid nitrogen. However, these solutions are very corrosive to bronze, brass, and copper. By substituting aluminum or stainless steel parts for these corrosive metals, your row crop sprayer can be used for applying liquid nitrogen.

If you are considering using your sprayer for applying some of the new-mixed liquid fertilizers, you had better just forget it, unless you want to put out a big sum of money for stainless steel booms and fittings.

As yet, stainless steel is the only metal that has been found to successfully resist the actions of phosphoric acid that is used in the mixed fertilizers.

A very important part of any spraying operation is the calibration. A speedometer on the tractor comes in handy if you have much spraying to do. This allows you to use the settings recommended by spray charts.

If you are having your first experience with a sprayer, it would be a good idea to fill your tank with plain water first and spray a known acreage. Then determine how much water it takes to refill the tank. By knowing the acreage sprayed, you can determine the rate of application. Once you get the sprayer properly calibrated, mark the throttle setting on your tractor. You can then mix in the chemical and start spraying.

Weed killers leave a residue in the sprayer that can cause damage to legume crops if you are to spray for insects later on.

Clean all nozzles and boom extensions with kerosene and a small brush. Put from 5 to 10 gallons of kerosene in the tank, and circulate it for five minutes through the pump and by-pass hose back to the tank. Then run the kerosene through the boom and onto the ground.

Mix one box of a detergent cleaner with 30 gallons of water and repeat as with the kerosene. Replace the nozzles and boom extensions. Partly (one-third to one-half) fill the tank with one part of household ammonia to 49 parts of water. Circulate this mixture through the pump and by-pass, allowing a small amount to go out through the nozzles. Flush with two tankfuls of clean water by spraying through the nozzles.

Points on storage . . .

Now for a few suggestions for storing the sprayer when it is not going to be used for a long time. Remove the pump and nozzles and store them in a container of light oil. The tank should be cleaned thoroughly and stored with the rest of the sprayer in a building where it will not be exposed to the weather. **THE END**

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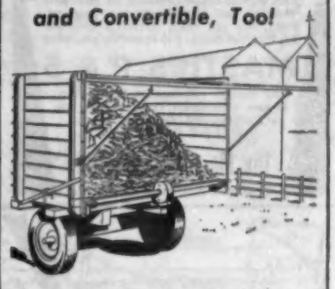

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ARTIFICIAL BREEDING

Ohio adds Jerseys to young sire project

CAREFULLY selected young sires, sampled early, result in proved sires for an artificial insemination program. The proof on their daughters is made under A.B. conditions. Thus the young sire program, which began more than a year ago in Ohio and several other states, has the advantage of early proof on a bull. If he is chosen to be used widely, most of his useful life is ahead of him.

Northern Ohio Breeders' Coop. Association, Tiffin, Ohio has now added Jerseys to its young sire program.

Breeders cooperate . . .

Twenty-nine Jersey breeders, all members of NOBA who comprise the Young Jersey Sire Project selected two young Jersey bulls to be used through NOBA to obtain a proving in 29 herds at a very young age. The two calves selected were Commando Marlu Mascot and Vaucluse Surville Harvest Pride.

Both are sons of well-proven sires and out of very strong cow families. "Harvest" is by the Gold and Silver Medal Sr. Superior Sire, Imp. Surville Gold Designer whose daughter, "Get" and "Produce" topped the Jersey Jug and Futurity class. His 28 daughters average 9,746 milk, 520 butterfat and 28 classified average 85.18 per cent. Harvest's dam is Boncrist Ceres Pride, classified "Very Good" and 11,989 milk, 510 butterfat in 305 days, 2x milking, as a 5-year-old—actual record.

"Mascot" is by the Excellent 7-star Sr. Superior Sire, Sparkle Supreme. He is the sire of Marlu Milady's Fashion, Excellent formerly National Senior 2-year-old champion and just recently the National 4-year-old Milk and Fat Champion. His 18 tested daughters average 11,064 milk, 590 butterfat—305 days, 2x milking, mature basis. Twenty-two classified daughters average 87.96 per cent.

His dam, Marlu Commando Pearl, "Excellent," is a full sister to Advancer Gem Commando (32 daughters, 10,414 milk, 582 butterfat) now heading the Randleigh herd. She has several outstanding records, the highest—10,530 milk, 664 butterfat in 305 days, 3x milking as a 4-year-old (actual production).

How program operates . . .

The young sire program is guided by a committee consisting of Jersey breeders, representatives of Ohio State University and Northern Ohio Breeders' Association. Cooperating herd owners, by pooling of funds, agree to buy a one-half interest in the young bull selected. One-half interest is owned by Northern Ohio Breeders' Association. A cooperator must agree to be a part of the project 5 to 10 years. He agrees to breed at least 10 cows a year to project bulls and to grow out the heifers. He must do continual D.H.I.A. or H.I.R. testing and have his herd officially classified regularly.

Northern Ohio Breeding Association agrees to sample as many project bulls as practical each year. Such bulls are to be used routinely as soon as age permits. The bulls are housed and maintained by the bull stud until proof is available. Final decision to use a bull heavily, after his proof is available, is left to the judgment of a "Sire Selection Committee" made up of representatives of the three cooperating parties.

Before a young sire can be entered on the project at least 75 per cent of the cooperating breeders must endorse him. Cooperating breeders, since they own an interest in the young sires, pay the inseminators fee for service.

Whether the bull proves good or bad, NOBA repays the cooperators investment when the bull reaches 5 years of age.

It is hoped this plan will develop several proved sires a year. The most outstanding of these will be made available to all Jersey breeders through routine service channels.

—Jean Lemmerman

Artificial breeding continues to grow

During 1955 there were more artificial breeding organizations, more herds enrolled, and more cows bred than at any time since the beginning of artificial breeding in this country. On January 1, 1956, there were 661,497 herds enrolled in 1,502 artificial breeding organizations. In 1955, there were 5,413,874 cows bred artificially.

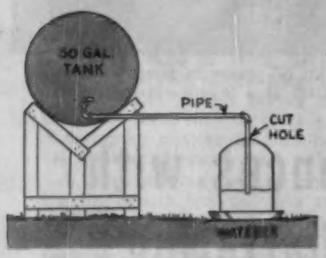
Compared with the previous year, this was an increase of 26, or 1.8 per cent, in the number of organizations. The number of herds enrolled increased 68,307, or 11.5 per cent; there was an increase of 258,634, or 5 per cent, in the number of cows bred.

With 1,000,293 cows bred in 1955, Wisconsin maintained its lead of the states in number of cows bred. Following are the states in which 50,000 or more cows were bred by artificial breeding organizations in 1955:

Wisconsin	1,000,293
Minnesota	495,330
Pennsylvania	434,566
New York	425,080
Ohio	335,400
Iowa	311,651
Illinois	260,870
California	249,126
Michigan	234,371
Indiana	161,683
Missouri	145,024
Washington	127,137
Idaho	87,893
Vermont	81,864
Kentucky	67,878
New Jersey	65,621
Kansas	64,772
Maryland	61,661
Oregon	56,233
Tennessee	55,268
Massachusetts	52,938
Nebraska	52,921
Virginia	50,364

HANDY HINTS

AUTOMATIC CHICKEN WATERER



This is my system for keeping my chicken waterer filled.

We placed a 50-gallon barrel on a stand about 6 inches higher than the chicken waterer. We used a threaded pipe the same size as the barrel outlet, from the barrel down through the chicken waterer. The other outlet of the barrel is kept tightly closed so that no air gets into the tank.

When the water level in the waterer gets below the pipe, the air bubbles up the pipe and lets water run into waterer. When the water gets above the pipe opening, the flow of water stops.

Minnesota GORDON MAENKE

NO FUNNEL NEEDED

It is a difficult job to fill the radiator of your tractor or car without a funnel, and there never seems to be one available when you need it most.

We have found that a pail with a small hole near the top works well for filling radiators without spilling any water.

Make a 1-inch hole in the side of a pail, near the top. This hole permits a stream to flow that is just about the size of the mouth of the radiator.

Pennsylvania KENNY TODACK

SIMPLE BALE HOOK

To make this simple hay hook, take an old pair of ice tongs and remove the bolt. Grind the point down if needed.

This hook can be used for loading bales onto a wagon behind a baler and also can be used when moving the bales in the barn.

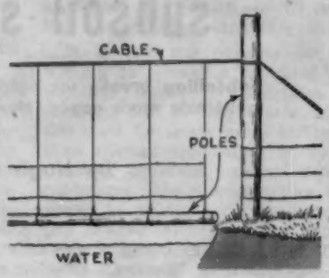
Illinois R. E. ATCHISON

KEEP BULBS CLEAN

We find this idea very handy. While whitewashing a building, substitute burned out light bulbs for the good ones to keep whitewash out of the fixtures and keep bulbs clean.

Wisconsin PAUL GROSSMAN

SWINGING FENCE OVER RIVER

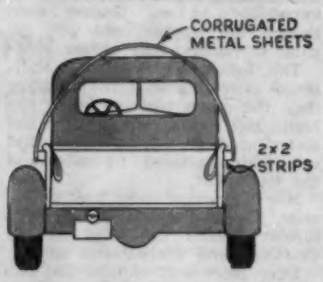


When building a fence over a river or creek, you have the problem of making a fence that will not wash out after a heavy rain.

We set a large creosoted telephone pole on each side of the river and braced it well to the adjoining fence posts with a steel cable. This one-half-inch steel cable between these two poles holds a swinging gate over the river. An 8-inch telephone pole fastened to the bottom of the fence floats out and up as the river rises, allowing debris to float on through.

Minnesota ERNEST NELSON

TRUCK BOX COVER



You can keep your feed and seed dry in your pickup truck box or trailer by covering with corrugated, metal sheets.

We used 6 corrugated metal sheets that were arched by the local tinsmith. These metal sheets were overlapped about 1 inch and fastened with stove bolts.

A 2 by 2 strip of wood was bolted to each side of the truck box, near the top. The metal sheets were bolted to these 2 strips of wood to form the arched roof, resembling a covered wagon.

The entire cover can be removed as a unit merely by removing the 2 by 2 strips of wood.

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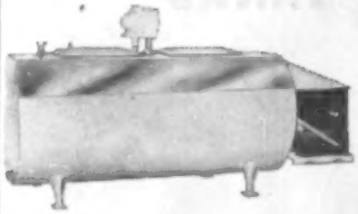

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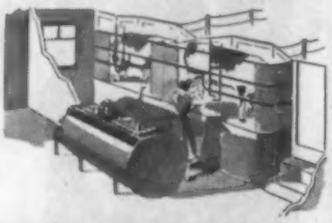

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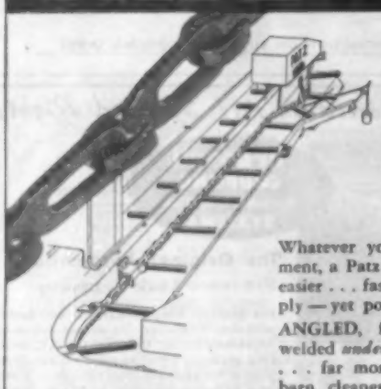

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THE PATZ COMPANY POUND, WISCONSIN

SUBSOILING CHISEL requires a lot of power to shatter the subsoil. Here hardpan is being broken up in a 2-year-old alfalfa field.

Our experiences with subsoil shattering

Subsoiling breaks up tight soil layers so water can penetrate more easily. Here are results in New York.

by Hugh M. Wilson

SUBSOIL shattering is variously known as "jostling," chiseling, and "pan breaking." Some people believe it pays, while others feel it is a waste of time.

Our first experience with subsoil shattering was in 1951. The field selected for trial had a silty-clay hardpan about 12 inches below the surface which made the soil poorly drained and hard to work. It was definitely a problem. Work was done in the fall when the ground was dry in order to obtain the most thorough shattering effect.

The hopper mounted on the frame of the chisel was used for deep placement of lime and fertilizer on part of the plots. The chisel was drawn at 30-inch intervals at a depth of 15 inches. Due to the hardness of the soil it was impossible to go deeper even though the tractor used was capable of hauling four plows.

The following spring the shattered plots appeared to be dryer than the check plots so hopes ran high. But by July differences had disappeared to such an extent that soil tests revealed no effect of the treatment.

Nor did crops show any difference. Corn and oat yields were almost exactly the same on the shattered and unshattered plots.

Deep placement of lime and fertilizer gave no better results than extra lime and fertilizer applied on the surface.

So, after watching the plots for three years, we gave them up as a bad job.

Quite different results were obtained from trials established in the fall of 1954. One set of plots was located on a moderately-drained soil that was used for vegetable production. Another was on poorly-drained soil which was seeded with a mixture of birdsfoot and alfalfa in the spring of 1955. A crawler tractor was used with the chisel mounted on the drawbar. This provided ample power and good depth control. The chisel was drawn at intervals of 26 inches and to a depth of 24 inches. No deep fertilizer placement was attempted.

Observations throughout the growing season indicated that crops on the shattered plots were somewhat better, so the soil was carefully examined in the fall of 1955. Penetrometer tests showed that topsoil on the shattered plots was less compact. This seemed strange since the intent was to break up subsoil. However, it was concluded that the soil was dryer at the time of fitting so less compaction occurred. If this is the correct answer, it indicates a benefit from shattering not considered before.

The most dramatic results were noted in a trench that was dug on the poorly-drained soil. The location of the chisel was established by a straight, darker-colored mark which extended from the surface through the pan to a depth of two feet. Soil on either side of the mark was easily spaded whereas a pickaxe was required to loosen the soil in the middle. The zone of loose soil was shaped like an inverted V, very narrow at the top and about 16 inches wide at the bottom.

Roots had penetrated to a greater depth in the chisel zone and the subsoil was more moist indicating greater infiltration of water. Therefore, it seems certain that shattering broke up the tight hardpan and that the benefits lasted for a year after the work was done.

A comparison of the 1951 and 1954 trials raises a lot of questions. Why were such varying results obtained on similar soils? Did the extra depth make the difference or was it some variant in the soil? Should chisel spacing be closer or will a deeper zone on part of the field fulfill the needs of plants? We wish we knew and will continue to try to find the answers.

CHISEL on small tractor will help break up the hardpan formed at the bottom of plow furrows.

The author is an associate professor of soil conservation, Cornell University, New York.

Drouth area farmers . . . overfeed protein

(Continued from page 580)

ticity to show certain trends in feeding practices. This is especially so since it is tempered by conservative estimates in all cases regarding amounts of feed and production value of feeds, particularly in the case of the roughages.

The results of this survey indicate that there may be quite a lot a dairyman can do to pare down his drouth-influenced feed bill.

A good starting point in reducing the drouth feed bill is a rigid culling program. The number of low herd averages under liberal feeding conditions shown in the Oklahoma survey indicated the presence of loafing producers.

When the herd has been reduced to those individuals deserving of the dairy cow label it becomes a matter of feeding adequate, balanced rations, but no more. There is immediate concern always for those readily detected dairymen who feed their potential 500-pound producers as if they were 200-pound producers. This survey seems to indicate that such a dairy farmer is a rare, if not extinct, bird in Oklahoma.

It would appear that the concern should be for those folks who feed their 200-pound producers as if they were 500-pound producers.

Need more testing . . .

A sound, workable performance-testing program is a prerequisite for both effective culling and efficient feeding programs. The lack of adequate testing programs was indicated in this survey by the fact that most milk production statistics were obtained from plant reports.

Most dairymen can relate the exact fuel consumption per hour of operation of their tractors or cite the mileage of their automobiles. As mileage decreases and oil burning increases, there becomes mounting interest in a trade for something better. It is a continual source of amazement that so few of those same people know the mileage rating of their dairy cows, with the result that inefficient producers continue to enjoy the dairyman's feed and loving care and contribute to nothing but costs, primarily feed costs.

It is not the purpose of this writing to present a complete and detailed lesson in principles of feeding, but to call attention to the need for even more stringent than normal application of sound feeding practices under drouth conditions. The means to this end should be no further than a round trip to the county agent's office. Perhaps but a short visit with a more successful neighbor may be a helpful step.

Nor is it the purpose of this writing to belittle the problems of the drouth-ridden dairyman for it is well-recognized that they are many, varied, and, too often, without solution. It is well-recognized, also, that mere existence in the dairy production business under drouth conditions is an accomplishment worthy of note.

The Oklahoma survey has shown some glaring flaws which might be good starting places for dairymen wishing to develop programs aimed at a goal above the plateau of mere drouth existence.

THE END

For better pastures - kill weeds and brush

(Continued from page 578)

treatments are seldom 100 per cent effective. Provide for follow-up treatments as necessary.

After foliage spraying keep livestock out of the field for at least a week or 10 days. While the chemicals are not toxic, these pastures often contain poisonous plants. Spraying may make these plants more attractive to animals.

For trees and stumps . . .

Now let's move up to some good-sized trees. Here we can use the dormant treatment during any part of the season. We believe, however, that it is best done when the trees are dormant (when leaves are off). The brush killer can be applied to the base of a standing tree or to stumps.

For either basal or stump treatment, the bark should be relatively dry, free of snow, ice, and moisture. Extremely good results are obtained using one quart of brush killer and five gallons of fuel oil. The mixture is sprayed around the bottom 15 inches of the tree, being careful to get all the way around the tree and to spray the bark to "runoff."

Obviously, on thick-barked trees, such as cottonwood, willow, and elm this takes more spray solution than it does on thin-barked trees, such as honeylocust, haw, wild crab, and so forth.

Be certain to saturate the bark so that the chemical can reach the root system through the cambium or growing layer.

On stumps, the bark should be sprayed to the runoff stage. On large stumps, it is not necessary to completely cover the inside of the stump. For all practical purposes, this is dead wood. The growing layer occurs at the junction between the bark and the wood, and this is the area that must be thoroughly saturated with the spray solution.

One basal or stump treatment, using the above dosages, should result in 99.99 per cent control. It must be conscientiously done, however, all the way around the tree or stump to the runoff stage; oil must be used as the carrier.

Everyone knows, of course, that these trees also can be blasted out, pushed out with a bulldozer, pulled out with a tractor. If these facilities are available to you at a reasonable cost, it may be the procedure of choice. No two areas are alike. Choose the program which best fits you.

If all this sounds like too much work, sell the land, pocket the cash, and quit paying taxes on it.

THE END

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Dairy Scientists mark 50 years of progress

American Dairy Science Association celebrates Golden Jubilee this year. Hoard's Dairyman writer organized group in 1906.

by D. H. Jacobsen

IF A man from Mars had looked in on our country's dairy business in 1906 and then again 50 years later, he would hardly recognize it as the same.

Slowly but surely dairying has changed at the farm, at the plant, and in the distribution system to give us today a highly organized, scientifically geared business in what was once "a-family-cow and supply-your-neighbor" enterprise.

The American Dairy Science Association, organized in 1906, is this year celebrating its Golden Jubilee and highlighting 50 years of progress in dairy science and technology.

The history of the association is a story of men who were never satisfied with cows, or methods, or products which were "good enough." They were working and planning for more efficient dairy herds, more economical methods, and, most important, for dairy foods which would give the American public the best possible in palatability and nutrition.

Events of importance at the beginning of the 20th century included the development of milking machines, the adoption of "official testing," the organization of cow testing associations, and expansion in the use of the Babcock testing procedure. The National Dairy Show originated in 1906, and with it a new emphasis on type and conformation of dairy cattle. With the widening use of cream separators, the factory system of buttermaking was expanding rapidly.

All of these developments were part of the dairy scene in 1906. And this gives us an idea of the background at the time of the formation of the American Dairy Science Association.

THE LEADER in dairy research was the famed Stephen M. Babcock, shown with his first centrifuge which was used in developing the Babcock test in 1890.

There were no dairy schools as such, but dairy courses were being taught as part of the agricultural courses in the colleges. Land-Grant colleges had been established years earlier in Iowa, Illinois, Michigan, Minnesota, Missouri, Ohio, Pennsylvania, Indiana, Wisconsin, and New York. Among the earliest to specialize in dairy education was Cornell University, yet in 1900 the program was largely general agriculture.

There was little in the way of scientific knowledge of the dairy industry and learned instructors in dairy science were not available. Textbooks on dairying were not available and we looked to Europe for advanced scientific information. By 1905 the need for dairy departments was recognized, and separate courses in dairy production and dairy manufacturing began to be formed.

The Babcock test was developed by Dr. Stephen M. Babcock and published in the famous 12-page bulletin No. 24. This was published in 1890 and played an important part in teaching laboratory practice in the early 1900's.

By 1900 many of the fundamental discoveries connected with pasteurization, homogenization, condensing, and refrigeration had been made.

The rapid growth of creameries and cheese factories furnished markets for milk and cream, and stimulated interest in better dairy cattle and better dairy practices.

It was this new interest in developing dairying as an industry that prompted Professor Wilber J. Fraser of Illinois to call together, in 1906, a group of dairy-interest educators.

Long-time Hoard's Dairyman readers will remember Fraser as a regular writer in these columns. He was an exceptional man in his broad vision of dairying, his penetrating capacity for seeking out and putting his finger on key problems in dairy farming.

It was Fraser who, in 1901, led the first herd production testing project in America. The previous editor of Hoard's Dairyman was one of his workers in that northern Illinois program. In later years he led national dairy attention to the vital role of excellent pastures and roughage in low-cost milk production.

Seventeen educators from eight colleges and the U. S. Department of Agriculture responded to Fraser's invitation, and the meeting was held on the campus of the University of Illinois. They founded the "National Association of Dairy Instructors and Investigators" and, with a constitution of 98 words, started what we know today as the American Dairy Science Association.

The founders, as might be expected at that time, were engaged largely in milk production studies. Close contacts between dairy cattle breeders and the colleges were the rule. These early leaders played an important part in guiding the breeding, feeding, and management practices of those days.

THE FOUNDER of the American Dairy Science Association was Wilber J. Fraser, who was one of America's greatest pioneers in dairy thought and leadership. It was he who started production testing and taught the importance of top pastures and quality roughage in low-cost milk production.

There is a close relationship between the record of the American Dairy Association and the progress of dairying in the United States during the last 50 years. The reports of annual meetings, and the research articles published in the Journal of Dairy Science deal with the dairy cattle and production problems existing along the way. They show how problems were solved, and new ideas tested before they were applied in the field.

The high level of milk production in dairy herds today has resulted from research in breeding, feeding, and management conducted over the years. The work done in the college experiment stations has been carried to the dairy farms by the extension service and the breed associations.

Problems of the sanitary production and handling of milk on the farm have been studied continuously by the experiment stations.

Milk quality has improved to the point where cities are receiving high-quality milk from wider and wider areas.

Research and development in dairying has a bright future because of the sound research which has gone before. It is the function of the scientists in the American Dairy Science Association to carry on in furnishing tested information to guide the dairy industry in the future.

The Golden Jubilee celebration of the American Dairy Science Association this year commemorates the first 50 years of the association. We look back on these years of progress. Let us also look ahead to the years of opportunity before us. What will the man from Mars see in 2006?

Is chemical poisoning likely to occur in soils?

Many kinds of chemicals offer no problem; yet enough cases of serious crop injury have been reported to cause some concern.

by G. F. Warren

WHAT is going to happen to our soil if we keep spraying all these chemicals on our fields? This is the question most often asked when I speak at farm meetings. The question is a good one and the problem is similar whether the chemical is used to kill weeds, insects, diseases, or nematodes. Fortunately, a great deal of far-sighted research has been conducted to try to find the answer and avoid serious trouble.

The major concern is that continued use of chemicals might result in a build-up in the soil which would reduce the yield or quality of sensitive crops or inhibit growth of beneficial microorganisms.

Such a wide variety of chemicals is used and under such a wide variety of conditions that no one answer to the question will hold. Many materials seem to offer no problem, yet enough cases of injury have been reported that we should be concerned and keep up-to-date on the information that is available.

One of the first cases of trouble was reported with arsenic accumulation under apple trees in the Northwest. So much arsenic had been applied annually for insect control that the soil contained amounts which were toxic to the cover crops normally grown in the orchards. However, it should be pointed out that most crops do not receive as heavy applications of insecticides as fruit trees. Also, arsenic is known to be one of the most persistent chemicals in the soil, sometimes having been used as a long lasting soil sterilant.

More recently, soil applications of BHC (benzene hexachloride) have caused off-flavors in potatoes and certain root crops grown on soil previously treated with this insecticide and sometimes sensitive crops have been injured or killed by applications of weed killers to the preceding crop.

What happens to chemicals?

In normal usage, most agricultural chemicals do not build up in the soil since natural forces are acting to destroy or remove them. The five principal ways in which the activity of chemicals is lost are as follows:

Lost as vapors . . .

Soil fumigants and light petroleum oils are examples of materials that readily vaporize into the atmosphere and, therefore, present no problem.

Adsorbed by the soil . . .

Many of the new organic chemicals are strongly adsorbed by the clay and organic matter in the soil. In a recent cooperative study reported by the United States Department of Agriculture it was found that excessive applications of DDT and BHC caused severe injury to many crops. These crops were on a soil that was low in clay and organic content, but no damage on a black, prairie soil was reported. Many other experiments also have shown large differences in the amount of agricultural chemicals adsorbed by various soils.

Destroyed by chemical . . .

Calcium cyanamide has long been used as both a weed killer and nitrogen fertilizer. It is at first toxic to plants, but soon breaks down in the soil to harmless nitrogen compounds. Parathion and other organic phosphate insecticides are known to be very unstable. There has been no evidence that they will build up.

Destroyed by microorganisms . . .

Many bacteria and fungi are able to destroy organic chemicals. For example, under favorable conditions microorganisms decompose the usual pre-emergence applications of 2,4-D in three or four weeks. Good soil moisture, fairly high temperatures, plenty of organic material, and a high state of fertility all favor the rapid breakdown of organic chemicals.

Leached out of the soil . . .

In most dairying regions chemicals that are not strongly adsorbed will be readily leached out of the soil by the normal rainfall. The grass killers, TCA and dalapon, are examples of agricultural chemicals that are rapidly lost by leaching.

Thus we can see that there are many natural forces working to destroy or remove the chemicals we apply to the land. In many cases more than one factor will be operating at the same time. As a result, the danger of an accumulation of a harmful amount in the soil is not great.

How to avoid trouble . . .

In order to keep the chances of a build-up at a minimum, the following suggestions are offered:

1. Follow directions on the container and thus avoid overdosages.
2. Do not make heavy applications of the same chemical year after year to the same field unless it is known to be readily lost from the soil. There is much less danger of getting into trouble if the chemicals used are varied during the season or between seasons.
3. Rotate crops and thus different chemicals are likely to be needed for the pests involved.
4. Keep the soil well supplied with organic matter and fertilizer to hasten the breakdown by microorganisms.
5. Where there is a choice, it is safer to use a small application of a purified insecticide rather than a heavy dose of the crude material.

The author is a professor of horticulture at Purdue University, Indiana.

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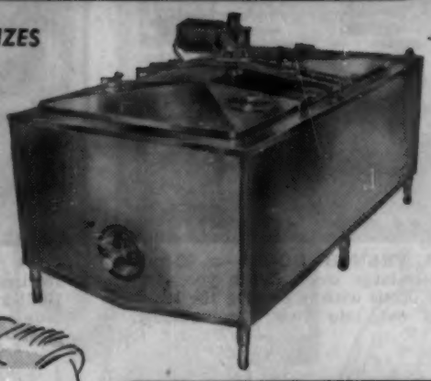

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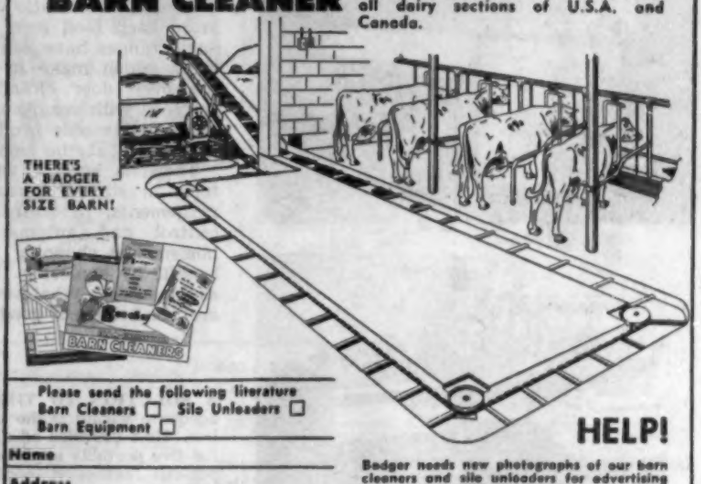

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THIS "MODULAR" KITCHEN, designed for new or remodeled homes has five automatic appliances under a continuous stainless steel countertop; requires nine feet of wall space. Built-in electric appliances are automatic dishwasher, food waste disposal, plug-in griddle, four surface cooking units, large oven with plug-in rotisserie, and smaller companion oven.

New models for modern cooks

by Margaret Speers

TODAY'S new ranges are designed to make cooking easy, quick, streamlined, and fun! In gas and electric models there's a wide variety available both in price and size. There are sleek, attractive, good-performing ranges for the tightly-budgeted, as well as ultra-modern electronic models for the homemaker with a thousand-plus dollars to spend.

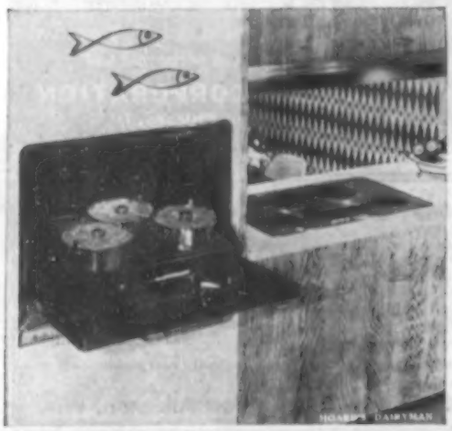
Where previously there was only the classic white, today ranges come in attractive, lively colors — reds, yellows, blues, greens, browns, pinks, beiges, and grays.

Many manufacturers have built speedier surface units, some claiming "red hot in just 20 or 30 seconds." There is greater flexibility in the switches that regulate the heat so an almost unlimited number of special heats are possible. Some switches have been made to control the location of the heat; thus the homemaker, using a small pan that covers only the inner part of the surface unit, can set the switch so only the inner portion of the unit will heat.

Other thermostatic devices have been built in to keep food from burning or scorching. Some ranges have new filter devices in oven vents which make it possible to broil with the oven door closed. Others have ovens designed with removable dividers and heating units that enable broiling and baking in the same oven at the same time.

There is such a wide variety in divided tops, in size of surface units, in oven arrangements, in built-in equipment, in heat-control and automatic devices, that the homemaker shopping for a new range will benefit by exploring the field as extensively as possible. Whatever her choice, chances are she'll have a good range for her money.

THE END



GAINING IN POPULARITY are built-in ovens and surface cooking units, which come in colors and in stainless steel, chrome, and copper finishes; have automatic features of regular ovens. Most wall ovens have broilers; some have plug-in rotisseries. Retail prices will vary but oven costs about $200, and surface units about $170.

A SOLUTION TO THE PROBLEM of inadequate wiring is the small central unit at left. Unit provides adequate electric current for five portable appliances at one time; has pull-out extension cords, automatic timer and selector, and panel of circuit breakers with reset switches. As shown, it is installed in a custom-built cabinet for storing appliances; can be installed in standard cabinets.

ELECTRONIC RANGES are now available. Pictured here, open and closed (inset), range cooks by microwaves. Oven walls and utensils remain cool; only food heats. A cooking method safe for children; bakes potato in 5 minutes; cooks egg in 20 seconds; 5-lb. roast in 30 minutes.

THIS RANGE HAS disposable foil linings in oven to eliminate oven cleaning work and an automatic electric meat thermometer (see inset) that tells cook temperature of meat, also turns off oven, turns on light when roast is ready.

4553
SIZES
12—20
30—42

4553. Even a beginner can whip up this dress in a day. The curvy neckline, fitted bodice, and flared skirt are so smart and so becoming. Misses' sizes 12 to 20; 30 to 42. Size 16 takes 3¾ yards 35-inch fabric.

4809
SIZES
10—20

4809. Change from sundress to city dress by merely buttoning on the clever collarette. You'll get so much wear out of this smart combination. Misses sizes 10 to 20. Size 16 dress takes 4½ yards 35-inch fabric; collar, 1⅛ yards.

9084
SIZES
9—17

9084. Longer lines for the junior miss figure in a graceful, whirling summer dress. Junior miss sizes 9 to 17. Size 13 takes 3⅞ yards 45-inch fabric.

4773. Slenderizing sheath dress and box jacket proportioned to fit the shorter, fuller figure. Half sizes 14½ to 24½. Size 16½ dress takes 3¼ yards 35-inch fabric; jacket, 2⅛ yards.

9056. Flattering dress with graceful yoke and favorite 8-gore skirt. Designed especially for the not-so-slender figure. Half sizes 14½ to 24½. Size 16½ takes 4¼ yards 35-inch fabric.

4773
SIZES
14½—24½

9056
SIZES
14½—24½

9129
SIZES
10—20; 40

9129. Cinch to sew this handy apron in full length or cobbler style. No fitting problem; it wraps and ties. Misses sizes 10 to 20; 40. Size 16 takes 4¼ yards 35-inch fabric.

9189
SIZES
12—20 40

9189. Base your summer wardrobe on this slim classic frock. Step-in styling, squared armholes, and pockets for flattering detail. Misses' sizes 12 to 20; 40. Size 16 takes 4 yards 35-inch fabric.

4833
SIZES
14½—24½

4833. Active half-sizers can make bra, skirt, shorts, and blouse from this one pattern. All destined to mix and match the summer through. Half sizes 14½ to 24½. Size 16½ blouse and skirt take 4½ yards 35-inch fabric; ⅝ yard contrast.

9119
SIZES
12—20

9119. Perfect design for a pretty summer dress. Note the soft gathers below the button yoke and the graceful flare of skirt. Misses' sizes 12 to 20. Size 16 takes 3⅞ yards 35-inch fabric.

4758
SIZES
36—50

4758. Designed especially for the larger figure, to slim and trim unwanted inches away. Women's sizes 36 to 50. Size 36 dress takes 3½ yards 39-inch fabric; bolero, 1¾ yards.

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Ice cream sodas home style

From the test kitchen of the American Dairy Association

COME summer, the smart mother sets up a soda fountain at home, the best of insurance for keeping the small fry within sight and for keeping close tabs on teen-agers. Something might well be said for the morale-lifting effect on Father, too.

Easy enough to do—tall glasses; straws; iced tea spoons or their cousins; chilled sparkling water; a variety of flavors and fruits; and of course, plenty of ice cream in the refrigerator's freezing compartment or in the freezer. Let each one make his own. They'll need no "come and get it" bell-ringing!

The idea, in general, as to the making is simply this: Into a large glass put about **⅓ cup of crushed sweetened fruit (strawberries, raspberries, peaches, apricots, pineapple)** or about **3 tablespoons syrup (chocolate or maple** we'll say), a **scant ¼ cup of chilled milk,** and a **large scoop of ice cream.** Then fill almost to the top with **chilled sparkling water.** Stir. Add straws and serve.

For a richer "soda" stir a small scoop of ice cream into the fruit or syrup and milk mixture until creamy; then top with a full scoop of ice cream and add sparkling water.

Different flavors of ice cream can be used by way of variation, the choice depending upon the syrup, sauce, or crushed fruit used.

Try flavored sparkling beverages . . .

Cola, root beer, or gingerale sodas are good. Put a large scoop of vanilla ice cream into a large glass. Almost fill with the chilled beverage desired. Stir well. Ice cream may first be stirred into the beverage.

Fruit juices good . . .

Fruit juices and nectars may be used in much the same way, though they're really not a true soda. A good one is made by putting a generous scoop of vanilla, pineapple, or lemon ice cream (peach ought to be good, too) into a glass. Pour ice cold pineapple juice over it. Muddle it just enough to mix the flavors slightly. Add a spoon and gay straws, then more ice cream. This makes a good light top-off to a summer meal.

You're never too old . . .

P.S. For a grown-up group, you might try scoopsfull of vanilla or coffee ice cream in a glass of hot coffee. The younger set will settle for "chocolate milk" with a scoop of chocolate or vanilla ice cream.

Good eating . . .

Ice cream, you know, is mighty good food besides being so much fun to eat. A dish of ice cream (about ⅔ cup) gives us practically the same nutrients that we get when we drink half a glass of milk. But be sure it says "ice cream" on the carton or container.

Need a partner?

Cookies are always good. If you're fresh out, why not make these **Cocoanut Crunchies?** Remove crust from **unsliced bread** and cut in ¾-inch slices, then in fingers. Roll each in **sweetened condensed milk,** using fork or fingers as you please, then in **shredded cocoanut.** Place on buttered cookie sheet and bake in a slightly under moderate oven (325 degrees) until the cocoanut is browned. So good they'll think it's cake. **THE END**

From Day to Day

by Lois J. Hurley

A FRIEND of mine made a remark the other day that many of you could re-echo, I'll be willing to bet.

"I never use my vacuum attachments; I gave them away," she said.

I used to be guilty of allowing my attachments to catch dust in the closet, too. But, a combination of having to keep a house dust-free for an allergic child plus my old arthritic spine sent me upstairs after these gadgets.

I've a tank-type cleaner with standard fixtures. I attach the hand vacuum to the flexible hose and suck up the dust from furniture, drapes, and books on shelves. Only a twist changes from brush-vacuum for rugs to brush-vacuum for bare floors. The soft-brush attachment will polish a hardwood floor or linoleum without so much as a bend in the back. And the long, slim crevice tool is the first thing I've found that will get the dust out of the crack between the head boards and box springs on the beds, and way deep down in the overstuffed chairs and sofas.

Allergies . . .

Possibly many of you fight the battle of house dust for allergic members of your families, so you know what a tussle it is. My 9-year-old has had tendencies toward allergies, asthma, and eczema (all closely associated) ever since she was born.

This past year she developed night coughing and wheezing. If any parent has sat up with a child during the long hours of a night while it fought for breath and coughed until you expected its lungs to come next, you know how tough it is. So, reluctantly, we took her to an allergist and started the long fight.

Starting with 50 skin tests we have progressed through some of the diet-restrictions (they seemed to make very little difference, in her case; dust-proofing her room and keeping the living quarters as dust-free as humanly possible; banishing the dog from living quarters; and receiving vaccine shots for house dust, pollens, molds and ragweed twice a week, to continue for 15 months.

It may be comforting to you who have members of the family suffering from allergies to know that you do not stand alone. I have been amazed at the number of patients who stream into our doctor's office for twice-weekly shots. Little babies, 2-year-olds, school children, teen-agers, men, women, preachers, teachers, nuns, working men, housewives . . . I think the whole world has allergies.

Did people always have allergies and didn't know it? Possibly, under the name of asthma, which we now know is caused by allergies of which I suppose doctors used to be completely ignorant. Discovering what caused this dreadful affliction is one of the important advances in modern medicine, I think.

Rug care . . .

House dust makes me think of rugs and carpets, where so much of this offender lurks, unless you take special pains to keep the floor coverings clean. Our University of Wisconsin has released some good hints on rug care.

First, don't beat your rugs, like Grandmother used to do. Don't use soap on them and don't clean with ammonia, which so many women do to brighten the colors. Vacuum thoroughly every week and, several times a year, wipe them with a detergent suds solution that you make by whipping up two tablespoons of neutral detergent in a quart of water.

Use a sponge to pick up only the dry suds on top and clean sections of the rug in a circular motion, overlapping the strokes. Lay all the pile in the same direction. Don't get the rug wet; it should feel only slightly damp. If you rinse, do so with the sponge squeezed out of clear, warm water and be sure to lay the pile in the same direction.

Home cleaning in this way gives a very good appearance to wool and blended rugs, but this does not remove ground-in dirt and grit; only a professional rug cleaner can do this. Likewise, cotton rugs cannot be successfully cleaned by home shampoo methods; professional services are required on cotton carpeting for satisfactory results.

Put aluminum foil under the legs of furniture to prevent them making a dent-impression on the rug pile, especially if rug is not completely dry. And, if you do have pile-flattened places, you may be able to bring them up by steaming if your rug is not a frieze or twist.

Lay a thick, wet cloth over the spot and hold a hot iron over the cloth, not on it. Steam until the pile rises, then brush in the direction of the carpet pile. Twist weaves may un-twist under steaming, so beware.

When loose tufts appear in the rug, don't pull them out; cut them off. For re-sewing seams on rugs, use waxed linen thread. If corners or edges curl, try steaming the same as for crushed pile.

Barbecued chicken . . .

I've never been very adventurous with chicken, thinking that it was hard to improve on fried chicken, roast chicken, creamed chicken with biscuits, or chicken and dumplings. This summer, though, I'm going to try **barbecued chicken** on some of my guests.

From one of our poultry specialists comes this personal recipe for barbecuing 2-to-3-pound broilers. Allow a half chicken per person, he says, and use either a rotisserie or the oven. If a rotisserie, put the whole chicken on the spit; adjust to turn slowly, and baste with butter or a barbecue sauce.

If you use the kitchen oven, lay the chicken halves skin-side down in a flat pan and start for 15 minutes at 450 degrees. Reduce to 325 degrees and baste often with melted butter or barbecue sauce.

Here's a recommended **barbecue sauce**, especially good for chicken; **2 tablespoons brown sugar, 1 tablespoon paprika, 1 teaspoon salt, 1 teaspoon dry mustard, ¼ teaspoon chili powder, a few grains cayenne pepper, 2 tablespoons Worcestershire sauce, 1 cup tomato juice, ¼ cup chili sauce, ¼ cup vinegar, ½ cup chopped onion, and 2 tablespoons cooking oil.** Combine and cook over low heat for 15 minutes. Baste over chicken as turned.

Barbecued chicken is delicious served with **buttered rye bread, potato chips, and a tart cold slaw.**

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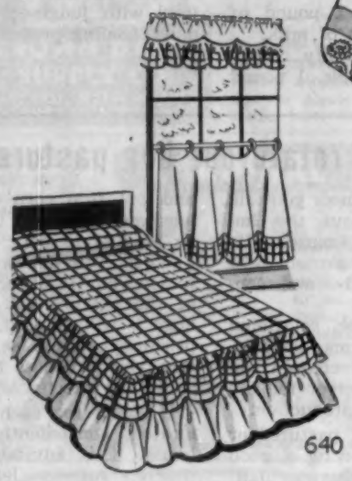

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YOUNG DAIRYMEN

BASIC FARM PRACTICES

Use thumb rules for feeding

GRAIN is fed to supplement the roughage the cow eats. How much grain the cow needs will first depend upon the amount and quality of the roughage eaten. Several other important factors help determine the amount of grain.

Young cows need more than older cows producing the same amount of milk because growth requires additional nutrients. Thin cows need more grain than cows in good flesh. Heavy-producing cows need grain for milk and butterfat production, and following the peak lactation period extra grain is fed to replace the body weight loss resulting from heavy production.

Many thumb rules have been proposed to help us determine the amount of grain each cow needs. These serve as useful guides, but the smart feeder does not blindly follow such rules. He considers each cow individually and adjusts the rules to fit her needs. The economy of grain feeding is important, too.

Where milk prices are high and concentrates cheap, it pays to feed more grain than when the milk-feed price ratio is unfavorable. In rare cases the cost of nutrients in grain may compare favorably with the cost of nutrients in roughage and again heavier grain feeding may pay.

The amount of milk produced and the per cent of butterfat in the milk is the basis for most thumb rules. A common one is this grain feeding guide:

For Holsteins: 1 pound of grain per day for each 4 pounds of milk produced daily.

For Brown Swiss, Milking Shorthorns, and Ayrshires: 1 pound of grain per day for each 3½ pounds of milk.

For Guernseys and Jerseys: 1 pound of grain per day for each 3 pounds of milk.

Less grain is needed when quality roughages are liberally fed. For example, 1 pound of grain for each 5 to 8 pounds of milk is sufficient for a Holstein cow on good pasture. Cows producing less than 20 pounds of milk daily may not need any grain in addition to good roughage.

WEIGH YOUR GRAIN so each cow receives the amount required for maximum milk production.

Here is another thumb rule that accounts for both production and roughage quality. To determine the pounds of grain to feed daily with **excellent** roughage, divide the pounds of butterfat per month by 6; with **good** roughage, divide pounds of fat per month by 5; and with **fair** roughage, divide the pounds of fat per month by 4.

It is impossible to use these feeding guides without production records. We therefore have another important use for production records in our dairy herds. Thumb rules used with judgment are part of a practical dairy feeding program.

—J. W. Crowley
—R. P. Niedermeier

Let's rotate our hog pasture

EVERY good swine producer you talk to will tell you about the importance of his pasture program. He will tell you how it reduces the protein feed cost, provides vitamins, minerals, and contributes to health and growth.

Other farmers will tell how rotational pasture has helped control worms and disease. At the same time it has increased soil fertility, provided a continuous cover for the land, and reduced cost of hog production.

You can provide an excellent pasture for the hogs on your farm by following a good four-year rotation using the following plan:

First year—Corn.
Second year—Oats seeded with legume.
Third year—Hay.
Fourth year—Pasture.

Naturally you would want to locate a field close enough to the hog house, if possible, to help reduce the labor cost. The field should be large enough to accommodate your swine herd when divided into four fields. One-fourth of the field would then furnish pasture for your herd each year.

For example, when you start the first year, one field would be seeded to temporary pasture such as oats and rape instead of corn. The second field would be seeded to oats with legume seed. The third and fourth fields would be seeded likewise.

This method would give you better than average pasture the first year. The fourth field which you seed down would be plowed and put into corn the next year while the one you used for temporary pasture would be planted to oats and seeded with legume.

When you follow a program where you rotate your pasture, you improve the quality of the pasture and increase the number of hogs it will support. The fact that hogs are produced on the same ground only once in four years reduces the chances of your hogs becoming infected with worms and disease.

If fields for such a crop rotation can be located conveniently near a central hog house, it is advisable for you to construct concrete runways leading to the nearest corners of each of the four fields.

—F. J. Giesler

BARNEY FARMLAN

"We have too many houseflies in the barn because they can't get in the house."

Move pullets to good range

CHICKENS are old enough to go on range at 6 to 8 weeks of age, but if they are started in February, Wisconsin ranges will not be ready until they are about 12 weeks old. Sell the cockerels as fryers at 10 or 12 weeks of age and move the pullets to range as soon as pullets and range are ready.

Your pasture should provide young, actively-growing plants during the entire growing season. If you don't have that kind of pasture this year, plan ahead so you will next year.

Mixtures of Ladino clover, alfalfa, and brome grass are very satisfactory. An acre of good pasture will supply green feed and range for about 500 birds. Don't let the pasture "grow away from the birds." If it gets too tall, mow it or pasture other animals on it.

Be sure that pullets find their way back into the house or range shelter at night after first being put on range. If they are let out when 6 or 7 weeks old, you may want to pen them near the house for a few days with a temporary fence.

When pullets are first let out, place feed and water outside but near the house. Move the feeders every few days, gradually placing them farther away from the house until they are several rods distant. This practice encourages the birds to range more and eat more pasture, and prevents development of bare areas around the feeders. —H. R. Bird

Apply fertilizer needed

ALL fertilizer applications for corn should be based on soil tests in order to make the most economical use of the plant food. However, the starter fertilizer will usually be a 1-4-4 or 1-2-2 ratio such as a 5-20-20 or a 6-12-12 fertilizer. In fields that are poorly-drained or very low in nitrogen a 1-1-1 ratio such as a 12-12-12 fertilizer will give better results.

Regardless of the grade of starter fertilizer used, one should limit the amount drilled with the seed to 150 to 300 pounds per acre on heavy silt or clay loam and to 100 to 150 pounds per acre on the lighter sandy soils.

If soil tests indicate that more phosphorus and potassium is needed than the starter fertilizer contains, then this additional plant food should be broadcast before plowing, if possible.

If the test shows that only additional nitrogen is needed, this may be side-dressed after the corn is up, or in the case of anhydrous ammonia, applied even before planting.

Proper placement of fertilizer is important because only then will the corn have an advantage over the weeds in their struggle to obtain plant nutrients. Applying manure, nitrogen fertilizers, or complete fertilizers on plowed ground will favor the growth of weeds. Deep tillage before planting will help to partially offset this condition.

The fertilizer program should supply the corn plant with enough food at all times. Corn makes its most rapid growth from about July 10 to the end of August. During this 5- or 6-week period, corn will use from 2 to 3 pounds of nitrogen and potassium per day per acre. If the soil and manure do not supply these needs, the difference must be made up with fertilizers.

Recently, complete liquid fertilizers have appeared on the market. The N-P-K content of these fertilizers must be clearly indicated. This will show the percentage by weight of the available nitrogen, phosphoric acid, and potash. This is the same as for the regular solid fertilizers. These liquid fertilizers may be applied through attachments on the planters or broadcast before plowing.

—L. E. Engelbert
—A. E. Peterson

SWINE

by R. H. Grummer

Slow growth rate . . .

. . . by cutting down on the calories.

RATHER large quantities of ground corn cobs or alfalfa hay in swine rations help to make pork carcasses contain less fat.

That's the report from a group of University of Wisconsin livestock scientists who conducted tests with high-fiber swine rations.

They found that hogs fed bulky rations make slower daily gains, so the feeding period is longer. Longer feeding periods may benefit farmers who usually farrow their sows during the heavy farrowing season, since a delay in marketing would avoid the usual flood of the market and the sharp seasonal price decline.

It has been known for some time that moderate limited feeding improves the fat-to-lean ratio in hogs. The labor cost is high when hogs are hand-fed a limited amount of feed each day. Therefore, poor-quality alfalfa and corn cobs were used to accomplish limited feeding while still using the self-feeder.

As much as 12 to 16 per cent fiber was fed, whereas the usual ration contains 5 per cent or less.

Rate of growth and length of feeding period to 210 pounds was compared for hogs on the two high-fiber rations and a normal ration. When they were slaughtered, the hogs on the different rations were compared for dressing percentage, fat back thickness, carcass grade, lean cut yield, and carcass length.

The dressing percentage was significantly decreased by high-fiber rations, while the length of feeding period was significantly increased, the researchers say.

Fat back thickness was decreased by both the 12 per cent and 16 per cent fiber, and carcass grade was improved by the 12 per cent fiber. But the carcasses of hogs on the 16 per cent fiber rations were low in quality and graded lower than carcasses from normal rations because they contained too little fat.

Carcass length and percentage of lean cuts were not greatly increased by either 12 or 16 per cent fiber rations.

Certainly the practice of adding coarse feeds to the ration is not practical for all farms, maybe for only a few. A lot of coarse, bulky feed is necessary to make a ration of 16 per cent fiber.

Adding about 25 to 30 per cent of ground corn cobs or ground alfalfa hay (low quality) by weight to the usual growing hog ration will reduce the normal rate of gain about 10 to 15 per cent according to the Wisconsin experiments. The cost of gain was increased slightly over that of "full feeding," but was less than that for hand-feeding a limited amount each day. Less labor accounted for the difference in favor of self-feeding the bulky ration.

Swine growers who farrow sows in late spring or early summer (May and June) and skimp the hogs along until the corn is harvested or until steers are put into the fattening lot might consider self-feeding the bulky mixture to slow up the rate of growth.

Which feed is best?

Feed salesmen pester me all the time. They give me a fancy line and tell me their feed is the best. They show me the feed tag but it doesn't mean much to me. Can a farmer like me tell which is the best buy from what is on the tag?

The feed industry uses two kinds of formulas which give information on what is in a bag of mixed feed. Each serves as a type of guarantee to the buyer.

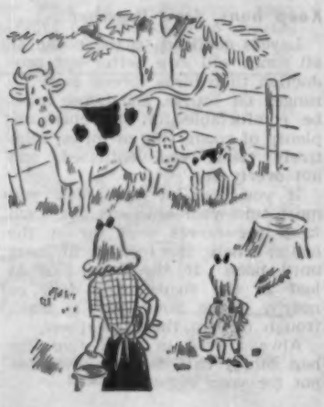
The "open formula" gives the most information. It specifies the amount of each feed ingredient. Your local county agent, agriculture teacher, and other qualified people in your area should be able to appraise the feed tag which contains the "open formula" information.

Most feed manufacturers use the "closed formula" system which lists the ingredients used in the feed, but only reports the amounts of major nutritional items such as protein, fiber, calcium, etc.

This rather crude description serves as a guide for evaluating the quality of feeds, but it does not give enough detailed information to judge feeds with any certainty. In general you know that nutritional items such as protein or phosphorus (supplied by bone meal) are costly. On the other hand, such items as nitrogen-free extract and salt are low cost. High-fiber content suggests the use of low-cost materials.

The best judge of the feed is the hog. Frequently a swine grower might well divide his herd and test two feeds on his own farm.

The conscientious feed salesman has been an asset to the livestock industry. He has helped us to do a better job of feeding and the chances are good that feed manufacturers will give more complete information on formulas in the future. It is only good business to guard some business secrets.



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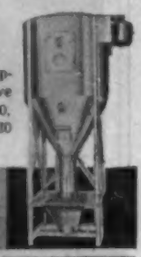

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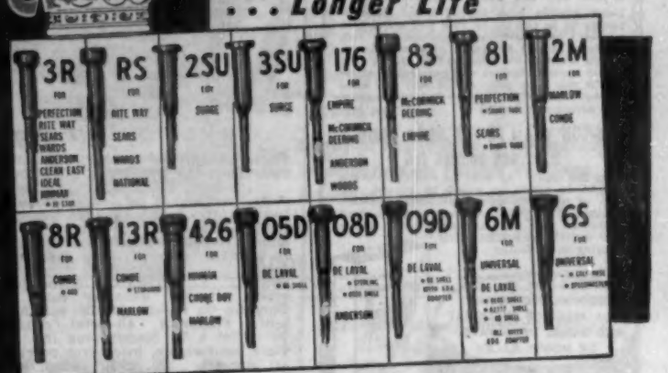

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POULTRY

Joe W. Sicer

The summer menu for layers

To get summer eggs, you must make your hens eat what they need—not just what they want.

HOT weather usually brings lagging appetites for the birds in the laying flock. It is only natural. The chances are that you, either, don't eat as much in summer as you do in winter. With layers, if you don't take this into consideration and make some adjustments in the way you feed them, you probably will be disappointed in the number of eggs you get.

Hens eat to satisfy their appetites. That is a basic principle you must understand if you are to learn the secret of feeding to get eggs. The appetite dictates that hens eat just enough to supply them with the heat and energy they need to be comfortable, and enough more to lay a few eggs in the spring so they can reproduce their kind.

As a poultry raiser, you want your hens to lay many, many more eggs than that. To get them to do it, you must first have hens of good egg-production breeding, and then make them eat the kind of feed needed to produce eggs. This you can do if you feed rations which are so formulated that if the hen eats what she wants to satisfy her appetite, she will have to take along with it the vitamins, proteins, and minerals that will make her "lay or bust."

The hen's appetite tells her to eat grain. In corn, oats, and wheat there is an abundance of energy, and enough protein to satisfy most of her absolute needs.

Proteins, vitamins in mash . . .

But the protein and vitamins needed for high egg production are mostly in the mash.

To force mash consumption high enough for good egg production means some limitation of grain. In summer it means still more limitation so that the hen can fill her needs for heat and energy only by eating a high proportion of mash to a relatively small amount of grain.

Merely cutting down on the amount of grain you feed may not be enough to do the job. Remember that appetites lag in summer so the total feed intake also drops. Even with less grain, the hens may still not eat enough mash to get the necessary vitamins and proteins for top egg production.

The proportion of grain to mash will depend partly on the protein content of the mash you are feeding. You can learn that from the tag which comes on the bag of mash. A good rule of thumb, when feeding a 20 per cent protein laying mash, is to feed equal parts by weight of grain and mash during cool weather. This gives an over-all ration with a protein content of 15 to 16 per cent.

As summer comes on, stop feeding grain in the morning and cut down on the amount of grain fed at night until the hens are eating **twice as much mash,** by weight, as they are of grain.

If you are using a mash with only 18 per cent protein, then 50 pounds of grain for every 100 pounds of mash is all you can safely feed, even in cool weather. In summer, you will be wise to stop feeding grain altogether.

"I haven't time to weigh feed every day," you say. Of course you haven't. And it isn't necessary.

Here is an easy way to come close enough without weighing. On the calendar, mark the day you open a bag of mash. Check how many days it takes your flock to eat 100 pounds. At the same time, paint lines on the inside of your feed bucket to mark the levels of various weighed amounts of grain. At each feeding, check the level of grain in the bucket so that you can keep it uniform. From time to time, vary the amount as mash consumption varies so you will be feeding the desired amount of grain during the time the flock is eating the 100 pounds of mash.

In feeding mash with hand-fed grain, **the all-important rule is to watch the proportion of mash and grain eaten.**

When production drops lower than it should, appetites can often be perked up with a change such as a noon feeding of high-protein pellets, or the feeding of a mash moistened with milk.

Free-choice feeding . . .

The same general principle applies when feeding grain and a concentrate mash free-choice. Watch the proportion of grain and mash eaten! Do not depend on the birds to balance the ration.

With a 26 per cent protein mash, about 200 pounds of grain per 100 pounds of mash may be safely fed in cool weather. In summer, the grain can well be further limited, and the mash supplemented with pellets or milk.

All-mash feeding . . .

With the increasingly popular all-mash feeding, there is no proportion of grain and mash to watch. But, in hot weather, the problem of smaller appetites is still there. Again, high-protein pellets or milk make good supplements.

Keep hens, feed together . . .

Layers confined to the house at all times will give better egg production than birds turned loose on range. Of course, the house must be comfortable for the chickens; plenty of room, free of mites, relatively clean, well-ventilated, and not overly hot.

If you are one who feels you must turn your chickens out, then keep the layers shut up in the house, where the feed is, at least until noon. If the hens like to loaf in the shade of a tree or nearby fence row, put a mash trough or two there for them.

Always keep in mind that the hen simply eats for her existence, not for your eggs.

He deals directly with his customers

(Continued from page 575)

insure as near complete collections as possible.

Prefers drive-up type . . .

Allen's new drive-in completes his cow-to-customer system. Just before building the store last year, Allen switched to the "drive-up" type rather than the "drive-through" mode prevalent in California. He is glad he made the change, because he believes the drive-through type is workable only in heavily-populated communities at high-volume locations near well-traveled highways. This is not the case in Las Cruces, which is a typical small town of the Southwest (population 18,000), where customers have the time and parking space to stop for a pickup—especially at the central location on the edge of "downtown" where the store is situated.

Eye-appeal and efficiency—these were the things which Allen kept uppermost in mind in the design of his store. The entire front of the 20- by 50-foot concrete-block building consists of three red-wood-and-glass doors of the overhead garage type, one or more of which are always open, depending on the season. The open-type front presents an inviting "come-in-and-buy" appearance which attracts passing motorists. Atop the building is a fiberglass brown-and-gold statue of "Guernsey Gertie," the cow that is the Allen Acres trademark. The statue is lit by special floodlights nightly.

It looks easy—and is—to drive up, walk in, pick up your milk and other groceries, and drive off again. A wall of refrigerated showcases of stainless steel line one end of the store, and house 15 cases of milk, which are rotated throughout the day. Shelving and refrigerated lockers hold the other items which the store sells—eggs, picnic meats, frozen foods, baked goods, party treats, and dairy products. A doughnut-making machine turns out close to 100 dozen a day, with a beguiling aroma that clinches many a sale.

Sells for 99 cents a gallon . . .

Over-the-counter milk sells at 99 cents a gallon, or 24¾ cents a quart. That's 2¼ cents below the home delivery price and the price of Allen Acres milk in the local supermarkets that stock it. Steel wire containers, called Handi-Paks, are provided so customers can conveniently tote off four quarts at a time. There's a small deposit charge on the container.

To take in the off-hours business, the store remains open from 7 a.m. to 10 p.m. every day. A manager and two clerks operate the drive-in, with their terms of work staggered so as to overlap one hour at switch-over time, enabling one employee to concentrate on cleanup during that period. "Spotless, pleasing surroundings, plus courteous employees who are willing to help customers—these are 'musts' for a retail operation," Allen says.

Allen's next move will be to market the culls from his dairy herd. "As every dairyman knows, dairy beef is tops for eating," he says. "Each cow is fed grain and carefully cared for all her working life. Yet we're discriminated against by packers because dairy carcasses don't cut up in the standard manner. We hope that a barbecue operation in our store will enable us to cash in on the good-quality beef we cull."

Plans barbecue service . . .

When building his store, Allen figured on the possibility of expansion. A 6-foot-wide section of one wall is laid with specially-scored masonry so that the concrete blocks therein can be easily removed. Allen plans to install next to this wall, an 800-square-foot addition, containing a barbecue kitchen to utilize his dairy beef, as well as chickens from other sources. He's aiming for a barbecue service based on packaged, ready-to-eat, take-out or deliver-to-your-door food of high quality. "Nothing will be consumed on the premises," he states.

Combined with the barbecue service, Allen plans to make his own milkshake mix in his creamery, deliver it daily to the drive-in, and use it in a special machine for producing "milkshakes to go." He hopes that this angle will help him beat that traditional bane of dairymen—the summertime slump.

Ideas are stock-in-trade for this enterprising dairyman. For example, since his start in the business, he has concentrated on marketing whole milk only. Allen Acres milk is homogenized and pasteurized as it comes from the cow. "We don't sell cream, we give it away—on top of our milk" was an early Allen Acres slogan.

Keep costs down . . .

What would it take for another dairyman to duplicate Allen's venture? Like any business enterprise, a farm creamery and retail store is a gamble, Allen cautions. He advises the use of as many cost-cutting techniques as possible. For example, Allen hunted up used creamery equipment, adapted an existing barn as his creamery building, built his own cooling tank, and used farm labor for construction. By going at it in a cost-conscious way, a farmer could build a creamery capable of bottling 3,000 gallons a week in five 7-hour days, for about $10,000, Allen figures.

The drive-in can involve an investment twice the size of the creamery, depending on price of lot, or whether the location would be leased. (Allen owns his lot.) New store equipment is almost a necessity, and so is attractive styling, he says.

"Retailing is a highly competitive game and a dairyman must do a good job of it to make a store pay," he points out. "You must know how to sell, how to package your products, how to set your prices and operate the store efficiently, how to advertise, and all the rest. But the extra work—plus a little luck thrown in—can pay off in more profit.

"I believe the salvation of the small farmer is to get closer to his customer." THE END

"He makes me mad when he hollers, 'next'!"

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DAIRYMAN wanted as assistant. Interested in production and show cows. State age and experience. BOX 712, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

MARRIED or single man to work on large dairy farm in Waukesha County. Must be willing to work with dairy cattle. Apply at BROOK HILL FARM, Genesee Depot, Wis. 11-2

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ASSISTANT Manager for 80-cow registered herd near Flint, Michigan. Loose-housing set-up, large modern home. Six-day week, cash monthly wages of $275.00 or share in heifers, possible opportunity to become manager. Write qualifications. Please no phone or personal calls without a letter first. GEORGE BURROUGHS, 1422 W. Cook Road, Grand Blanc, Michigan.

WANTED—Single man experienced machine and hand milking. Modern Jersey farm located in East. Top wages. BOX 697, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 8-*

DAIRYMAN to handle 160 acres, 60 cow setup in north central Alabama. Must be thoroughly experienced in scientific feeding, weighing and testing, as well as breeding. Must handle entirely with help of one full-time person. $300.00 salary plus modern five-room house with lights, telephone, plenty of water, and liberal percentage of profits. Pleasant surroundings, four miles from college town with good grade and high schools. Write, giving references and all details to DAIRYMAN, P. O. Box 2070, Birmingham, Alabama. 10-3

DAIRYMAN. Surge equipment, modern house. Experience, age, when available, wages expected? HAPPY VALLEY, P. O. Box 645, Fallon, Nevada. 5-apl

AUCTIONEER SCHOOLS

LEARN auctioneering, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

LEARN auctioneering. Term soon. Write for catalog. MISSOURI AUCTION SCHOOL, Box 8425D4, Kansas City, Missouri. 9-*

SWINE

FOR Sale—8 to 10 week old northern Wisconsin feeder pigs, $8.00 each. All top quality pigs, all vet. inspected. CLARENCE ACKER, Middleton, Wis. Phone 2569-6. 7-*

POULTRY—BABY CHICKS—DUCKS

STARTED pullets, White or Brown Leghorns, Black Minorcas, Austra Whites, New Hampshire, White Rocks, Legahirex. Vaccinated, shipping 30,000 each week during June, July and August. Send for low prices today. 100% live arrival. ALLEN HATCHERY, Box 100, Windsor, Missouri. 11-2

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RAISE Angora, New Zealand rabbits on $500 month plan. Plenty markets. Free details. WHITE'S RABBITRY, Jackson, Mich. 9-*

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GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

WORKING Border Collies. Imported parents. Puppies guaranteed. HOWARD McCLAIN, R6, Lima, Ohio. 3-*

SHEPHERDS, Collies, outstanding heelers, watch dogs. ZIMMERMAN FARMS, Flanagan, Ill. 5-*

TWENTY years breeding, training, handling registered Border Collies of excellent imported heritage, gives you intelligent, hard working cattle dogs. Try mine. M. S. PERROT, R-4, Ottawa, Illinois.

NUTRIA

RAISE Nutria—One pair can make you independent in 3 years. Part time, little capital and space. New in America but proven. Association backing. Visit our ranch or write. CABANA NUTRIA OF ILLINOIS, Rushville, Illinois. 11-2

RAISE Nutria for profit. North America's newest and fastest growing fur-bearing animal industry. Free literature. Write HENRY M. TURNER, R. R. # 1, Xenia, Ohio.

For More Special Opportunities Turn to Next Page

Guernsey meeting honors seven

At the 79th annual meeting of the American Guernsey Cattle Club in Philadelphia, Pa., seven pioneer breeders were honored.

The group includes:

J. P. Broadhurst, Westville, N. J., pioneer breeder and present manager of Locust Grove Farms;

W. K. Hepburn, Sr., Poughkeepsie, N. Y., former manager of two of the breed's most famous farms, Langwater and Foremost;

George Watts Hill, Rougemont, N. C., longtime member of the AGCC's executive committee and owner of Quail Roost Farm;

H. M. Pate, Trenton, N. J., farm and sales manager who founded the famous Eastern Guernsey Sale;

J. C. Penney, New York City and Gallatin, Mo., famous founder of both the chain of J. C. Penney stores and nationally-acclaimed Foremost Guernsey Farms;

James B. Robertson, Paoli, Pa., president of the Pennsylvania Guernsey Breeders Association for many years;

and, in memorium, the late A. L. Brown, founder of famous Clear Springs Farm in Concord, N. C.

Cope's Jerseys produce two more champions

Internationally famous for breeding champion producing dairy cattle, Cope's Jerseys under the management of Ralph E. Cope, Jr., Langlois, Ore., has two more Jersey cows that have gained national recognition for milk production.

Sir Challenger Pansy recently completed her third consecutive 1,000-pound fat record on twice-daily milking to become the second Jersey ever to obtain this production. Her stable mate, Opal Crystal Lady, was the first cow of any breed to attain this distinction and today holds five consecutive production records of over 1,000 pounds fat.

Sir Challenger Pansy produced 16,680 pounds milk containing 1,068 pounds fat in 365 days. This record was made in spite of a severe injury which she experienced during her record.

Lilac Lad's Juliet is the other cow in the Cope herd to attain a production level of 1,000 pounds fat. She produced 20,344 pounds milk with 1,102 pounds fat in 365 days on twice-daily milking at 8 years and 8 months of age earlier this year.

This record brought the total production of Lilac Lad's Juliet to 106,944 pounds milk containing 5,767 pounds fat. The fact that 53 one-ton trucks would be required to haul this production gives a graphic illustration of the amount she has produced in her lifetime.

Both cows are expected to receive Medals of Merit from The American Jersey Cattle Club, Columbus, Ohio, for their extraordinary production.

Chicago to repeat State Street Dairy Parade

Chicago's annual salute to the dairy farmer will be repeated in a great State Street Parade Saturday morning, October 6, the opening day of the 4th International Dairy Show.

Its sponsors are the Chicago Daily News, the Pure Milk Association, the American Dairy Association, and the International Dairy Show. The show opens October 6 for an 8-day run in the International Amphitheatre.

The hour long parade, featuring "Cows on State Street," will reflect all segments of the dairy world in the greatest dairy spectacle of the year.

Floats will depict how good cows, nutritious feeds, sanitary processes, and quick transportation provide the nation with the healthiest food—milk and its products.

Beauty and the beast will play an important part in the parade.

American Dairy Association state princesses from the nation's leading dairy states will provide the beauty as they ride in open convertibles along parade route.

Cows of the dairy breeds will proudly show themselves off on specially designed tractor-drawn floats, decorated to portray the country of their origin.

Among the musical units in the parade will be the 5th Army Band, the famous Stock Yard Kilty band of bag-pipers, and more than a score more of musical groups from throughout the Midwest.

Cowboys and cowgirls astride western horses will be there from the world's Championship "Golden Spurs Rodeo," daily entertainment feature of the International Dairy Show.

Special Opportunities

SEEDS AND PLANTS

GERANIUMS—2 dozen strong young plants that will brighten up your home wonderfully this summer. Postpaid $2.50 to your home. BUCKLEY GERANIUM COMPANY, Springfield, Illinois. 8-4

OF INTEREST TO WOMEN

FREE—"Sew It Yourself With Cotton Bags." New, free 24-page idea book for making clothing, household articles, toys and gifts from colorful cotton bags. 1956 Simplicity pattern illustrations. Send postcard to COTTON COUNCIL, Box 9906, Memphis 12, Tennessee. Offer expires April 1, 1957. More than $15,000.00 in valuable gifts, cash prizes, and free vacation trips given away to women during the 1956 Cotton Bag Sewing Contest. See your local feed dealer for complete contest information and official entry blanks. 10-2

BUY Wholesale Save 66 2/3%! Appliances, furniture, jewelry, toys, sporting goods, tools. Free catalogs. NATIONAL BUYERS SERVICE, Box 3338DB, San Francisco. 11-14

FILM SERVICE

FANFOLD Fotoe—Now by mail. Roll developed, 8 brilliant enlargements in album form, all for 25c coin. MAIL-PIX, Dept. H, Box 7100, Elkins Park, Pennsylvania. 9-*

ROLL developed, 8 beautiful enlarged prints 25c; 12—35c. (Trial) 10 reprints 40c. Quick service. WILLARD'S, Box 2553T, Cleveland, Ohio. 10-*

MISCELLANEOUS

NEED stationery? You will like our livestock illustrations. We will print your order with your own breed on it. Write for stationery circular. HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. 20-*

PAINT, outside titanium, lead and oil. Guaranteed not to peel. $4.95 value, special factory price—$2.25 Gal. Free sample. SNOW WHITE PAINT CO., Toledo 2, Ohio. 7-5

BILLBOOKS — Statements—Envelopes—Rubber stamps. EDDIROSE, Bronx 72, New York. Free catalog.

FREE booklet on Florida farming. Send for 36-page booklet with information on every phase of Florida farming. Learn about Florida's extra advantages—long growing seasons, multiple crop production, diversification, expanding markets. Florida needs experienced farmers with adequate capital—truck farmers, dairymen, poultrymen, livestock raisers, nurserymen. And Florida offers happier year 'round living for you and your family. Plan a Florida sightseeing vacation soon. Visit famous attractions, and the farm areas. Send today for Florida farm booklet and we'll include vacation folder with 25 color illustrations of Florida scenes—both free! Write STATE OF FLORIDA, 6507E Commission Bldg., Tallahassee, Florida.

For Person-to-Person contact use Hoard's Dairyman Classified Ads.

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LARGEST PRODUCERS OF 4% MILK
at lowest feed cost
The Dairyman's choice for greatest net returns from his cows
Write for literature or list of breeders near you

AYRSHIRE BREEDERS ASS'N. 10 Center St., Brandon, Vt.

AYRSHIRE BULL CALVES—Have you selected that good senior bull calf that is nice enough to show, and good enough to be your next herd sire? We have a few extra good ones. Write for pedigrees and prices.
STRATHGLASS FARM, Box 71, Port Chester, N. Y.

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If you are interested in a combination of Neshaminy Miss Phett and Penshurst Jim, we have just the foundation you are looking for.

Our Son of "Miss Phett" by "Jim" is siring the kind that everyone likes. Better reserve a bull—that way you will be sure to get more for your herd sire dollar.

LONG LANE FARM, Marine City, Michigan

THE STARTING POINT FOR DAIRY PROFITS

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"Traditionally The Best" NEW HAVEN, IND.

REGISTERED AYRSHIRE BULL CALF, Born 9/12/55. Dam's record 12000# milk, 557# fat as a 2 year old. Imported breeding. Write: GREENFIELD FARM, Box 63, Route 2, Mukwonago, Wisconsin.

REGISTERED AYRSHIRE BULLS
All ages, from approved and high producing dams.
BAN TARA FARM Hudson, Wisconsin

BROWN SWISS

WHAT BROWN SWISS HAVE TO OFFER

Whether you are an old breeder, or a new breeder contemplating entering the ranks of the breeders of purebred Brown Swiss cattle, you are interested in the future of Brown Swiss cattle. Interest in Brown Swiss cattle is growing more rapidly today than in any other dairy breed in America. The reason for this is that Brown Swiss have proved themselves to be what real dairy farmers want.

Farmers today are more widely interested in Brown Swiss cattle than ever before. The number of animals registered, the number of sales of breeding stock, the number of inquiries from all parts of the country each year are greater than the year before.

For more information about the breed write:
BROWN SWISS ASSOCIATION, Beloit, Wis.

Annual HYCREST Goodwill Heifer Sale

will be held in Northampton, Mass., on August 11, 1956. Consignments of outstanding heifers and young cows have been made by top Brown Swiss Breeders in the Midwest and East who have used HyCrest blood lines in their breeding programs.

HyCrest Farms
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Greater returns per dairy acre

Jerseys make more profit per acre because you can keep more animals per acre, and because they produce more efficiently. And, Jersey milk brings a premium price.

THE AMERICAN JERSEY CATTLE CLUB
Dept. G Columbus, Ohio

BRYN MAWR FARM . . . Announces new location. Bryn Mawr farm has been sold for subdivision. The new farm is six miles south and east of Farmington, Minnesota.
OUR NEW ADDRESS:
FRANK B. ASTROTH, Rte. 1, Farmington, Minn.

DALVIEW
★ JERSEYS ★

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FOR PRODUCTION PROVEN INHERITANCE IN JERSEYS THAT PAY WRITE

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"Bugs" Zelda, Darrell Lane, and Kyle Tate

GOLDEN SUNSET JERSEYS—Registered Jerseys since 1899. Too many young bulls and bull calves. From May 15th to September 1st we will offer these at lowest prices in years. Send for free list. Biltmore and Imported breeding. THE ENNIS JERSEY HERDS, Festus, Missouri.

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STUDY THIS HERD SIRE PROSPECT
BRIGHAM CONFIDENT LINDOL
Born 11-19-55 Tattoo T 34
A Son of June Volunteer Confident, Excellent Sr. Superior Sire—Full brother to the top Jersey cow in the nation with 1,319 lbs. fat.
Dam of calf is an Excellent, Ton of Gold with 5 records to 732 lbs. fat. 2nd Dam is an Excellent, Ton of Gold, Tested Dam, 100,000 lbs. milk producer. Next 3 dams are Tested Dams.
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PROMISING BULL CALVES
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Factual research underscores the *extra profit potential* from the high production level of the typical Registered Holstein.

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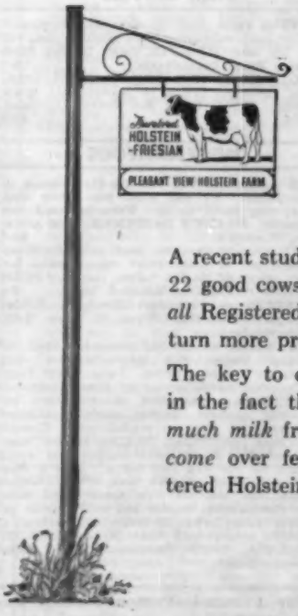
Big production per cow with Registered Holsteins adds up to more milk per acre . . . per man-hour . . . per dollar invested — the real answers to increased dairy profits today.



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A recent study in a leading dairy state reveals that 22 good cows, producing at a rate close to that of *all* Registered Holsteins on official test, actually return more profit than 300 average cows!

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Why not be the proud owner of your own herd sire? We have many out of 700, 800, or 900 lb. dams. Breeding stock you are looking for. State your wants, better yet, come and see for yourself. The World's Greatest Production Herd. Prices reasonable.

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Choice registered Guernsey bulls by proven sires, such as HORSESHOE CONRAD ASTERBILT and out of at least 550 pound dams, for sale. Large selection to choose from, serviceable age and younger. Calfhood vaccinated. Bang's free. TB accredited herd. Write or visit us for pedigrees and full particulars.
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Breeding animals of both sexes available.

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Dam's three records average 12434—594 in 305C, 2 on 2x milking, 1 on 3x. Sire's dam Excellent has 5 consecutive records 2x—4 in 305C, averaging 10956 —580. From great cow families. Also choice unrelated heifers all ages.

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Choice high grade Jersey, Guernsey and Holsteins. Springers and fresh cows. Some milking be fresh later on. Also bred and springer heifers. T.B., Bang's tested. Also 6-7-8 mo.-old heifers. Calfhood vaccinated. Taking orders now for future delivery. **Claude Thornton, R#2, Box 286, Springfield, Mo.**

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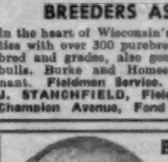

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We are in position to help purchase your dairy cows direct from farms where they are bred and raised for high production. Bonded and licensed, thirty-five years experience, insured truckers available. Call or write me before purchasing dairy cows.

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NEED MILK?

Thirty of the 45 cows we advertised last time have been sold, along with 9 bred heifers that were not advertised. That leaves 15 cows, and these are 15 of the best. Five buyers came. They bought, respectively, 2, 4, 5, 9 and 18 head. No one asked for anything off, because they were priced right—nothing under $300.00—nothing over $400.00.

All are production tested, classified, Calfhood Vaccinated and Negative.

Who wants these other 15? Better phone. Numbers 776 or 842.

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Complete Sales Service . . . Auction and Private Treaty . . . Our listings include Proved Sires, outstanding bulls, cows, heifers. Also a few top show prospects. Fieldmen at your service. **Cary, Illinois —Box 404—Phone: MErcury 9-5831.**

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Pabst Regal "Excellent"
Gold Medal Proven Sire
Two All-American "Oets"

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Burke-bred bulls and semen available. Write for pedigrees and terms.

PABST FARMS, Inc.
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Pabst Fobes Burke Ex.
All-American Jr. Ylg. 1953
All-American 2-yr-old 1954

CARNATION MADCAP BUTTER BOY "Excellent"

A Butter Boy son from a daughter of Excellent - Gold Medal Carnation O Boy

THIS week we offer an outstanding son of Carnation Madcap Butter Boy "Excellent" son of Frasea Butter Girl Wayne "Excellent", who recently completed a 13-year-old record of 1008 lbs. of butterfat.

The dam of the calf offered is a 586 lb. two-year-old daughter of "Excellent", Gold Medal Carnation O Boy. Next dam is a "Very Good" 1037 lb. daughter of Governor of Carnation from a 1094 lb. "Very Good" daughter of Carnation Ormsby Perfection.

Here is production and type to suit the most critical breeder.

He is Ear Tag B-268, born September 29, 1955.

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Buy direct from farms where top production dairy cattle are raised. Over 300 to select from. Located in "Heart of Indiana's Dairyland," Kosciusko County. Experienced truckers available. Also Shetland ponies.

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For better, faster and more economical Mastitis treatment, see and try Selecta now!

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Hazards to heifers on pasture

The greatest hazard is neglect by the owner. Heifers should be watched closely at least twice every day.

by E. A. Woelffer, D.V.M.

MANY of the heifers now on pasture will be in the milking line this fall or sometime next year. To a considerable extent their performance at the pail during the first and later lactations will depend upon how well they get along this summer.

Whether the heifers are in a distant pasture or near the farm buildings, keep them under close observation.

Check fences often so you always know where the heifers are. Good fences also keep stray cattle from intermingling with the young stock.

Failure to keep up fences may not only strain neighbor relations through destruction of crops, but also be the means of spreading disease from one herd to another. The following example demonstrates what can happen:

Broken fence—then disease . . .

A dairyman purchased a so-called "stockyard' bull of breeding age and turned him out with his heifers. A neighbor's heifer in heat in an adjoining pasture attracted the attention of the bull. He had little difficulty getting through the fence and serving the neighbor's heifer.

To make a long story short, the bull was infected with the venereal disease known as trichomoniasis. This infection is readily transmitted at time of service. He infected the neighbor's heifer. She did not conceive on that service and later was bred to the regular herd sire.

Through this service, the herd sire was infected and carried the disease to many of the other females. The incident resulted in two badly infected herds and great economic loss to both dairymen.

The dairyman who purchased the bull did a great disservice to himself through carelessness in selecting a bull with unknown history. He also ruined his neighbor's herd by turning the bull on pasture without adequate fencing.

Other infections and diseases may be transmitted readily while on pasture through intermingling of cattle from different herds. In self-defense, do not place heifers in the same pasture with those from another herd without a careful check of its health status. Maintain adequate fencing when pasturing livestock next to a neighbor's herd, particularly one of questionable health.

Feeding is easy . . .

When plenty of good pasture is available, grain feeding is seldom necessary. If this is not the case, hay, silage or grain must be supplemented. Animals on pasture should have access to fresh water at all times, free choice salt, and shade.

Too little or irregular supplies of these items seldom cause death. Often, however, there is loss of weight, and lowering of resistance to disease and parasite infestation.

Weak calves have been known to result when too little salt is available. Placing a generous supply of salt on a flat rock or on the ground once a week is not good practice. The salt, plain or mineralized, (and other minerals if they are necessary) should be provided in a special-built covered container placed near the water supply and rack for roughage or grain feeding.

Check heat periods . . .

If the heifers are of breeding age, heats should be carefully checked. Even then, some estrus periods will be missed. Provisions for observing heats at least twice daily must be made if most heifers are to be bred on time.

A substitute measure is turning a healthy young bull with a few virgin heifers. It is important that the bull has not serviced mature cows naturally before placing him with healthy heifers.

Older bulls, or even young bulls that have serviced mature cows naturally, sometimes have difficulty in settling heifers. The principal reason is that heifers have not had the opportunity to build sufficient resistance to low-grade venereal infections transmitted by bulls that have had contact with mature females.

Possible abortions . . .

While making checks for heats, observe each heifer for any irregularities or abnormalities. Look for pending abortions indicated by early udder development or swollen vulva. If there is self-sucking or one heifer nursing another, remove the offender immediately or apply an anti-sucking device.

Observe individuals for lameness. If foot rot is suspected or there is evidence of sickness or infection, call a veterinarian at once. If mudholes persist, fence them off or fill them in with gravel. Also fence out pools of stagnant water from which the heifers are likely to drink.

Shade is important for protection against the hot sun. If there are no trees, an inexpensive shed or lean-to is a good investment. Following an electrical storm, check for injury or death from lightning.

Summertime is the busy period on the farm. Heifers on pasture are apt to be neglected. A successful program for their care includes the following:

1. Maintain good pasture fences.
2. Provide a constant supply of fresh water.
3. Provide salt, preferably mineralized salt, in a covered container in a convenient place.
4. If minerals are necessary, make a constant supply available in the same manner as salt.
5. If pasture growth is inadequate, supply grain and supplementary roughage. It is preferable to have a fresh supply daily.
6. Observe heats closely.
7. Check carefully for udder and foot injuries, for signs of sickness and infection, and for signs of abortion.
8. Remove heifers that have acquired the sucking habit or correct the condition.
9. On your daily visits mingle quietly with the heifers. This gives them confidence and makes it easier to break them in for milking.

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A Milk Record Sheet

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Cystic ovaries of cattle

What causes cystic ovaries?

The exact cause of cystic ovaries is not known. There is some evidence, however, that the condition is caused or associated with heavy feeding and high milk production. There also appears to be a heredity relationship.

Certain high-producing cow families appear to have a larger percentage of cystic ovaries than others. The incidence increases as breeding is delayed.

How do cysts develop?

Normal healthy cows return to heat about every three weeks when they are not bred. The cow is quiet between heat periods due to the presence of a hormone called progesterone. Progesterone is secreted by a temporary tissue structure of the ovary, a "yellow body".

When the cow is with calf the yellow body remains intact in the ovary during the gestation period. When the cow is not with calf the yellow body begins to disappear or is absorbed in about 16 to 17 days following the previous heat.

When the influence of progesterone has been sufficiently reduced, a second hormone (estrogen or heat-producing) is formed in the developing follicle.

The normal follicle is a small blister-like structure on one of the ovaries. It normally ruptures about one to twenty hours after heat.

The egg is released and estrogen production ceases. When the follicle fails to rupture, it usually increases in size. This enlarged follicle is called a cyst. The estrogen hormone may or may not continue to be secreted. If the heat-producing hormone is continually or sporadically produced, the cow may show irregular heat periods.

Are cysts ever found when the cow does not show heat?

Yes, this is a fairly common occurrence. Heats are not noticed because the estrogenic hormone is not secreted by tiny glands within the cyst. The cow may go along for months without coming in heat if this condition is not treated.

Can cystic ovaries be treated?

Most cystic cows can be successfully treated with hormones. The earlier they are treated, the better the results. Treatment must sometimes be repeated. A small number of cows do not respond.

When a cow bellows and acts like a bull pawing the ground, is this a sign of cystic ovaries?

Yes, cystic ovaries are always found when these symptoms are present. In most cases, the condition is found after the cysts have been present for some time. Also, it may be an indication that the adrenal glands are involved. When these glands are affected, treatment is often unsuccessful.

When irregular heat periods are present, does it mean the cow is always cystic?

No. There are other causes of irregular heat periods.

If cystic ovaries are suspected, should I call my veterinarian?

By all means call him without delay. If it proves to be a cyst, prompt treatment is advised.

Are cows ever found cystic when they are pregnant?

Yes, sometimes there will be a cyst and a yellow body on one ovary or a cyst on one and a yellow body on the other. The occasional heat periods observed do not interfere with pregnancy. Sometimes it is advisable to treat the cystic condition. If properly treated, there will be no interference with pregnancy.

PERSISTENT DIARRHEA

I have a Guernsey cow with a condition resembling winter scours. After a careful examination, our veterinarian concluded that the diarrhea was not caused by contagion, infection, or by the presence of any foreign body in the digestive tract.

He left some capsules, but after a few days, there was no improvement. Then he advised me to try some new powdered antibiotic. One week on this medicine seemed to aggravate the diarrhea to such an extent that he advised me to discontinue it.

The cow continues to eat and milks about 30 pounds per day, although she has lost around 200 pounds in weight since freshening six weeks ago. There seems to be nothing else wrong except the diarrhea.

Honesdale, Pennsylvania O. A. D.

Several months ago we came across a cow with scours, having symptoms similar to those you describe, that would not respond to treatment. However, there may be no similarity.

The cow was finally slaughtered after a test for Johne's disease was found negative. The principal post-mortem lesions were a marked sub-mucosal thickening of almost the entire intestinal tract. Your veterinarian may find it advisable to test for Johne's disease if she does not respond to treatment.

We hope your cow improves. Later on, we would appreciate a report from you or your veterinarian on her.

BLOOD TUMORS

We have a year-old heifer that has spots on her legs, side, and back. They seem to scab over and then bleed.

We would appreciate any help you could give us on this problem.

Pickford, Michigan J. H. C.

From your brief description, we are not able to identify the "spots" you describe on the legs and body of your heifer. We believe, however, the lesions are what are known as angiomas or blood tumors. Animals as well as humans are occasionally born with this condition. They can do no particular harm except that they bleed every time the thin walls are broken. If the tumors are troublesome, they may be ligated or cauterized by your veterinarian.

If nothing is done, exercise care that the lesions are not injured with a currycomb, etc.

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Let your own cattle prove the goodness of Sta-Fresh treated silage. They'll like it better and do better on it. Sta-Fresh is sold in convenient 80-lb. bags. More and more farmers are learning the big benefits of Sta-Fresh . . . so demand is growing rapidly. Order it today from your dealer. *General Chemical Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, New York.*

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Every Dairy Farmer Should Read This Letter!

Reproduced below are excerpts from
a letter sent to all members of the
CARLTON COUNTY COOPERATIVE POWER ASSOCIATION
KETTLE RIVER, MINNESOTA

March 8, 1956

Dear Member:

. . . We do not sell milk tanks. We would like to be neutral, and we are - as far as manufacturers of tanks is concerned. Where we can not be neutral is at the point where equipment is proposed for installation which will by its operation reduce the capability of your present electric system, or create an unnecessary expense. Limitations have been placed in the past on other types of equipment, and it is just as necessary for us to choose here between two types of coolers. In our comparison the direct expansion type of cooler is the loser.

. . . There are some advantages in an ice bank type that cannot be duplicated by the direct expansion type. For instance:

1. The ice bank type can operate "off peak". This has been well demonstrated.
2. The ice bank type will not freeze milk. The direct expansion type frequently does.
3. The ice bank type provides some reserve refrigeration in case of power failure.
4. The ice bank type maintains a more constant temperature of the milk in the tank.
5. The ice bank type gives off more uniform volume of heat in the milk house.
6. The ice bank type usually: a. costs less to buy.
   b. costs less to install.
   c. costs less to service.
7. And it will meet every 3-A requirement as well as a direct expansion type will.

. . . We will be glad to discuss any of the points we have touched on if you wish to call on us in our office. We will continue to look for and give you accurate information.

Yours very truly,

CARLTON COUNTY COOPERATIVE POWER ASS'N.
Ludwig Anderson, Manager

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Model shown
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